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BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 24 1949

AUTHORS AND PSYCHOPATHS*

BY

W. RUSSELL BRAIN, D.M., F.R.C.P.

Physician to the London Hospital and the Maida Vale Hospital for Nervous Diseases

Of what interest, you may be wondering, is the psychopathology of authors except perhaps to the psychiatrist? I hope to show that it raises questions of considerable importance, primarily to doctors, but indirectly to everyone else. The relationship of mental instability to genius in general may seem to be of merely theoretical interest, but, since authors directly influence the minds of their fellow men more deeply than any other kind of genius, their mental peculiarities possess great social implications. Moreover, if we conclude that there is some positive relationship between their abnormalities and their achievements, we may find in this creative tension a contribution to the solution of the problems that confront many of our ordinary patients. Finally, our appreciation of an author's writing is greatly enriched by an understanding of his psychology.

At this point two possible objections need to be considered. Is it not enough, you may think, for us to enjoy the works of genius without bothering to analyse how they came to be produced, if, indeed, it is possible to do so? Wordsworth thought that nobody ought to pry into the lives of authors. "Our business," he said, "is with their books—to understand and to enjoy them. And, of a poet's more especially, it is true—that if their works be good, they contain within themselves all that is necessary for their being comprehended and relished." Wordsworth had his own secret—an illegitimate child in France—but it is true that we need know nothing about an author in order to enjoy his works. Surely, however, we shall enjoy them more if we know a little about his personality, if we understand not only the internal difficulties over which he had to triumph in order to produce them but how these very elements of his nature find expression in his writings. Biography adds a fourth dimension to the understanding and enjoyment of the works of genius; for, though we can enjoy a poem, a picture, or a symphony without even knowing who created it, we then enjoy it in isolation from the whole of the author's personality except its expression in that particular work of art. But when we understand his biography—and by biography I mean not merely a historical account of the facts of his life but also all that we can learn about his heredity, the workings of his nervous system, and the conflicts of his mind—we find his works enriched by being seen in perspective, in the dimension of time in which all his past has made him what he is and his creations what they are.

There is another objection also which is sometimes expressed. "What interests us about a genius," some people say, "is what is unique in him—not his neurosis or his psychosis, which is something he possesses in common with thousands of others." But it is a fallacy to suppose

The photograph of the statue of John Donne in St. Paul's Cathedral is here reproduced by kind permission of the Dean.

*An address given to the London Hospital Medical Society.

that the unique mental features of a genius exist in isolation from any abnormalities he may exhibit, for what is interesting in the neurosis or psychosis of a genius is not the features it shares with similar disorders in ordinary people but the part that it plays in his individual and therefore unique mental life. Indeed, the most important feature of any neurosis or psychosis is not what it shares with other disorders of its class but its uniqueness as an integral part of a particular personality. But I must add a word of caution. It is easy to let speculation run riot on the subject of the psychology of genius and justify oneself by the generalizations of some particular psychological theory. We shall be on firmer ground and still find plenty to interest us if we stick to descriptive psychiatry and concern ourselves only with those grosser traits of conduct, thought, and feeling which are obvious in the writings of our subjects or in the observations of their contemporaries.

Instead of generalizing about the psychopathology of authors I propose to describe in some detail a few case histories; but before I do so, and lest you should think I exaggerate the relationship between mental instability and great literature, here is a list, which is certainly not comprehensive, of some great writers who were either insane in the sense that they would to-day have been regarded as certifiable, or, though perhaps never certifiable, were cyclothymes, schizophrenics, obsessionals, psychopaths, alcoholics, or drug addicts: Beddoes, Blake, Boswell, Bunyan, Burns, Byron, Chatterton, Clare, Coleridge, Collins, Cowper, Crabbe, De Quincey, Dickens, Donne, Gray, Johnson, Lamb, Rossetti, Ruskin, Shelley, Smart, Swift, Swinburne, Tennyson, and Francis Thompson. And to show that English literature is not exceptional in this respect let me add a few from other nations: Baudelaire, Dostoievsky, Flaubert, Goethe, Gogol, Holderlin, Nietzsche, Poe, Rimbaud, Rousseau, Strindberg, Swedenborg, and Verlaine.

Death's Duellist

John Donne (1572–1631) is one of the strangest figures in English literature—the Catholic who died Dean of St. Paul's, the poetical amorist who became the author of the Holy Sonnets. His influence upon English poetry—which, according to his biographer, Edmund Gosse, was almost entirely malign—can still be traced without difficulty to-day. Dr. Johnson thought his metaphors far-fetched and at times indelicate. His eloquence as a preacher and his preoccupation with the fate of the body after death drew large crowds of fascinated hearers, and this perennial theme came so to possess him that the last events of his life seemed a drama in which he was ready at length to act the part he had so often rehearsed. For, he wrote,

> Since that I
> Must dye at last, 'tis best
> To use my selfe in jest,
> Thus by fain'd deaths to dye.

His *Devotions upon Emergent Occasions*, written during a serious illness in 1623, not only consist of characteristic reflections upon mortality but include in the headings of the chapters a summary of the stages of his disease and the conduct of the doctors. "The first alteration, the first grudging of the sickness. . . . The patient takes to his bed. The Phisician is sent for. The Phisician comes. The Phisician is afraid. The Phisician desires to have others joyned with him. The King sends his own Phisician. Upon their consultation they prescribe." Then follows the treatment—cordials and pigeons—but "the Sickness declares the infection and malignity thereof with spots. . . . I sleep not day nor night. . . . From the Bells of the Church adjoyning I am daily remembered of my buriall in the funeralls of others. Now this Bell tolling softly for another, saies to me, Thou must die." (In that chapter occurs the famous sentence, "Any man's death diminishes me, because I am involved in mankinde, And therefore never seek to know for whom the bell tolls; It tolls for thee.") But "at last, the Phisicians after a long and stormie voyage, see land." They proceed to purge, the patient recovers, but he is warned of "the fearful danger of relapsing."

Donne could never long avert his mind from the thought of the body's dissolution. It appears in his sermons on all sorts of occasions, one of the grimmest meditations on this theme being in a sermon preached at the marriage of the Earl of Bridgewater's daughter. Here is one such passage in his magnificent prose from his last sermon, preached before King Charles I. "That that Monarch, who spred over many nations alive, must in his dust lie in a corner of that sheete of lead, and there, but so long as that leade will laste, and that privat and retir'd man, that thought himselfe his owne for ever, and never came forth, must in his dust of the grave bee published, and (such are the revolutions of the graves) bee mingled with the dust of every highway and every dunghill, and swallowed in every puddle and pond: This is the most inglorious and contemptible vilification, the most deadly and peremptory nullification of man, that wee can consider."

Donne was dying when he preached this sermon, which came to be known as "Death's Duell." "Many that saw his tears and heard his faint and hollow voice," says Izaak Walton, "thought that Dr. Donne had preached his own funeral sermon."

But there was a stranger episode to come. Dr. Simeon Foxe, his physician, urged him to arrange for a monument to be erected to him in his cathedral. Donne agreed on condition that Dr. Foxe should not interfere in any way with the character or form of the memorial. Here is Walton's account of what followed:

> "A monument being resolved upon, Dr. Donne sent for a carver to make for him in wood the figure of an urn, giving him directions for the compass and height of it; and to bring with it a board of the just height of his body. These being got, then without delay a choice painter was got to be in readiness to draw his picture, which was taken as followeth:—Several charcoal fires being first made in his large study, he brought with him into the place his winding-sheet in his hand, and having put off all his clothes, had this sheet put on him, and so tied with knots at his head and feet, and his hands so placed as dead bodies are usually fitted, to be shrouded and put into their coffin or grave. Upon this urn he thus stood, with his eyes shut, and with so much of the sheet turned aside as might show his lean, pale, and death-like face. . . . In this posture he was drawn at his just height, and when the picture was finished he caused it to be set by his bedside, where it continued and became his hourly object till his death, and was then given to his dearest friend and executor, Dr. Henry King, then chief Residentiary of St. Paul's, who caused him to be thus carved in one entire piece of white marble, as it now stands in that Church."

No doubt Donne's attitude to death was in part Elizabethan, and it can to some extent be paralleled in contemporary writers, such as Webster and Sir Thomas Browne, but it was also an obsession, springing from what Gosse rightly calls "the morbid and fantastic character of his genius."

L'Enfant Terrible

Jonathan Swift (1667–1745) could claim distinction as politician, Dean of St. Patrick's, and satirist, but his satires

are remembered by many who know little about his politics and less about his theology. His satires spring from his feelings, and his emotional life was very odd, so odd indeed that it considerably puzzled his contemporaries and is still the subject of speculation to-day. In 1701 Swift, then 34, invited to live near him in Ireland two ladies, Esther Johnson, aged 20, whom he immortalized as Stella, and her older companion Rebecca Dingley. Till the death of Stella in 1728 Swift remained on terms of affectionate friendship with both of them, writing to them when he was absent letters which included messages couched in the language of the nursery. This strange relationship was complicated by the intrusion of another woman, Esther Vanhomrigh, whom Swift called Vanessa, and who fell in love with him.

The question which has been discussed ever since is, What were the relations of Swift and Stella? Swift was a single man of irreproachable morals: why did he never marry her? There seemed to his contemporaries, to Dr. Johnson, and to most people since, to be only two possible explanations: either he did marry her, but for some reason concealed the fact, or there was an external barrier to their marriage. They were, it has been suggested, uncle and niece or half-brother and half-sister. The barrier was real, but it existed in Swift's emotional life. The clue is to be found in *Gulliver's Travels*. "The greatest difficulty that occurs in analysing his character," wrote Johnson, "is to discover by what depravity of intellect he took delight in revolving ideas, from which almost every other mind shrinks with disgust. The ideas of pleasure, even when criminal, may solicit the imagination, but what has disease, deformity, and filth, upon which the thoughts can be allowed to dwell?" Swift's preoccupation with excretion is a constantly recurring theme upon which he plays some fantastic variations. His attitude to the body, and especially the female body, is equally pathological, and is magnified when the body is enlarged to the Brobdingnagian scale. Freud has a word for all this, but one does not need to be a Freudian to see that Swift was emotionally arrested at an infantile stage of development.

Perhaps the most illuminating piece of evidence for his abnormality is the speech which he puts into the mouth of Gulliver when meeting his wife and children on his return from his last voyage: "As soon as I entered the House," wrote Gulliver, "my Wife took me in her arms and kissed me; at which not having been used to the Touch of that odious Animal for so many years, I fell in a Swoon for almost an Hour. . . . During the first year I could not endure my Wife or Children in my Presence, the very smell of them was intolerable, much less could I suffer them to eat in the same Room. To this day they dare not presume to touch my Bread or drink out of the same Cup; neither was I ever able to let one of them take me by the Hand." This, it may be said, is Gulliver, not Swift, talking, but it is the imagination of Swift speaking through Gulliver, and no man who could feel so perversely about normal human relationships would be likely to marry. Swift may not have known why he felt as he did, but he had too much insight to be self-deceived. In a poem called *Cadenus and Vanessa*, in which he is Cadenus (an anagram of Decanus the Dean) and Esther Vanhomrigh is Vanessa, he writes:

> He now cou'd praise, esteem, approve,
> But understood not what was Love. . . .
> Love, hitherto a transient guest,
> Ne'er held Possession of his Breast;
> So long attending at the Gate,
> Disdain'd to enter in so late.

We do not know whether Stella ever challenged him in this way, but she seems to have come to accept the Platonic role he assigned to her. Swift was broken-hearted when she died. He lived on to die demented, after a period of melancholia, nearly twenty years later. There is a legend that this perversely fastidious man, who had been so revolted by the flesh, was buried in the same coffin with her. This invention was the last unconscious irony of the Yahoos.

The Great Convulsionary

I suppose that most people who possess an average man's knowledge of Samuel Johnson (1709–84) regard him as a monument of British common sense—a kind of intellectual John Bull, dogmatic, tough, and rather insensitive. This is only half the truth, the superficial half, for beneath his assured demeanour lay a torment of apprehensiveness, doubt, and misgiving which found expression in great eccentricity of behaviour.

Thomas Tyers said of Johnson, "He was to the last a convulsionary. . . . His gestures, which were a degree of St. Vitus's dance, in the street attracted the notice of the many, the stare of the vulgar, but the compassion of the better sort." Johnson's gesticulations, which gave Hogarth the first impression that he was mad, have often been described, but nowhere better than by Miss Reynolds, who speaks of "his extraordinary gestures or anticks with his hands and feet, particularly when passing over the threshold of a door. On entering Sir Joshua's house with poor Mrs. Williams, a blind lady who lived with him, he would quit her hand, or else whirl her about on the steps as he whirled and twisted about to perform his gesticulations: and as soon as he had finished, he would give a sudden spring, and make such an extensive stride over the threshold, as if he was trying for a wager how far he could stride, Mrs. Williams standing groping about outside the door, unless the servant or the mistress of the house more commonly took hold of her hand to conduct her in, leaving Dr. Johnson to perform at the Parlour Door much the same exercises over again. . . . But the manœuvre that used the most particularly to engage the attention of the company was his stretching out his arm with a full cup of tea in his hand, in every direction often to the great annoyance of the person who sat next to him, indeed to the imminent danger of their cloaths, perhaps of a Lady's Court dress; sometimes he would twist himself round with his face close to the back of his chair and finish his cup of tea, breathing very hard, as if making a laborious effort to accomplish it."

According to Miss Reynolds he carried out similar manœuvres in the street while his companions went ahead to wait for him, and caused a crowd to collect in Twickenham Meadows by his violent see-sawing over Grotius's *De Veritate Religionis*. Boswell has described his rolling gait and his habits of whistling and blowing and counting his steps in order to reach a certain point with his right or his left foot; and from Whyte we learn of his practice of touching posts in the street and going back when he had missed one to repair the omission.

Johnson's contemporaries were divided into two schools of thought on the question of the nature of his malady. Boswell, like Thomas Tyers, thought it was a physical disease, St. Vitus's dance, and believed he was confirmed in his opinion by Sydenham's own description, which he quotes. Sir Joshua Reynolds, however, with the acute observation of an artist, noted that Dr. Johnson's "strange antic gestures" accompanied his reveries and that he never exhibited them when engaged in conversation. He thought.

therefore, that the gesticulations were "improperly called convulsions which implied involuntary cortortions." Sir Joshua also made an observation of profound psychological insight when he said that Johnson's actions always appeared to him as if they meant to reprobate some part of his past conduct. It is quite clear to-day that Reynolds was right and that Johnson's movements, although involuntary in the sense that they were not under his control, were not, like St. Vitus's dance, due to organic disease of the brain but were of psychological origin. He knew this himself, for when a young girl, a Miss Hunter, asked him, with some temerity, "Pray, Dr. Johnson, why do you make such strange gestures?" he replied, "From bad habit."

Fears and Apprehensions

This view of the nature of his gesticulations is confirmed by the fact that symptoms of a similar kind occurred in the realm of thought and feeling. Here involuntary fears and apprehensions took the place of involuntary movements. It is impossible to agree with Raleigh that Johnson's fear of death was only a fear of Boswell on death. It was clearly an obsession which could be evoked not only by Boswell's inquiries but by the sight of bones or of a memorial urn, and this is the probable explanation of the outburst of almost hysterical laughter which was excited by Langton's making his will and which so puzzled Boswell. Another obsession was his fear of insanity, which remained with him from his youth, when he consulted Dr. Swinfen and received an answer "importing that the symptoms indicated a future privation of reason," to his old age, when at the time of his stroke he prayed God that however he might afflict his body he would spare his understanding —a prayer which, that he might try the integrity of his faculties, he made in Latin verse.

He was also obsessed with a sense of guilt. As Mrs. Thrale put it, his "daily terror lest he had not done enough originated in piety, but ended in little less than disease. . . . He . . . filled his imagination with fears that he should never obtain forgiveness for omission of duty and criminal waste of time."

Doubtless it was these fears of insanity, death, and damnation that racked his mind when he was alone and rendered solitude so distasteful and indeed distressing to him. "I lie down," he said, "that my acquaintance may sleep; but I lie down to endure oppressive misery; and soon rise again to pass the night in anxiety and pain." Nothing conveys so moving a picture of his lonely and distracted spirit as Murphy's account of how "for many years, when he was not disposed to enter into the conversation going forward, who ever sat near his chair might hear him repeating, from Shakespeare,

> "Ay, but to die, and go we know not where:
> To lie in cold obstruction, and to rot;
> This sensible warm motion to become
> A kneaded clod; and the delighted spirit
> To bathe in fiery floods."

This "morbid melancholy," which Johnson himself believed to be inherent in his constitution, pervaded his thought and made him, in his own words, "mad all his life, at least not sober." I can find no better or nobler expression of it than the last words of the last *Idler* which he called the "Horrour of the Last." In the course of this essay he says: "This secret horror of the last is inseparable from a thinking being, whose life is limited, and to whom death is dreadful." And he concludes: "I hope that my readers are already disposed to view every incident with seriousness, and improve it by meditation; and that, when they see this series of trifles brought to a conclusion, they will consider that, by outliving the Idler they have passed weeks, months, and years, which are now no longer in their power; and that an end must in time be put to everything great as to everything little; that to life must come its last hour, and to this system of being its last day, the hour at which probation ceases, and repentance will be vain, the day in which every work of the hand and imagination of the heart shall be brought to judgement, and an everlasting futurity shall be determined by the past."

Thus we can trace Johnson's morbidity at three levels—his compulsive gestures, his obsessive fears and sense of guilt, and his insistence on the evils of life, its transitoriness, and the ultimate and inescapable judgment, which sounds a note of doom in so many of his writings. Like many obsessionals he was subject to periods of severe depression, the worst of which occurred when he was between 50 and 60. His prayers and meditations in the first half of his sixth decade reveal his struggles with a deepening gloom. Dr. Adams told Boswell that he "found him in a deplorable state, sighing, groaning, talking to himself and restlessly walking from room to room." Mrs. Thrale says that he did not stir out of his room for weeks or even months, till she and her husband carried him off to Streatham.

Johnson's mental disorder was clearly compatible with the greatest intellectual powers and with considerable, if sporadic, energy. He found that he lost his symptoms partially or completely when his attention was fully occupied with something else; hence his eagerness for company and reluctance to go to bed. His discovery of the value of distraction is illustrated by one of Mrs. Thrale's anecdotes: "When Mr. Johnson felt his fancy, or fancied he felt it, disordered, his constant recurrence was to the study of arithmetic; and one day that he was totally confined to his chamber and I enquired what he had been doing to divert himself; he showed me a calculation which I could scarce be made to understand, so vast was the plan of it and so very intricate were the figures; no other indeed than that the national debt, computing it at one hundred and eighty millions sterling, would, if converted into silver, serve to make a meridian of that metal, I forget how broad, for the globe of the whole earth, the real globe." Dr. Johnson would have had no difficulty in making our present national debt reach to the moon.

He prescribed the study of algebra for a fellow obsessional who consulted him about his scruples, though he did not show him much sympathy. This was a man who was obsessed with guilt at having taken his employer's paper and pack-thread even with his permission. "I would advise you, Sir, to study algebra, if you are not an adept already in it: your head would get less muddy, and you will leave off tormenting your neighbours about paper and pack-thread, while we all live together in a world that is bursting with sin and sorrow."

To trace the effects of the obsessional state upon the temperament is beyond my present scope, but I would draw attention to one characteristic trait, the sufferer's attitude to the past. More than most men, the obsessional is in bondage to the past; for what is an obsession but a past idea of which he cannot rid himself? In Johnson's own words, "an everlasting futurity" is "determined by the past." The past is both inescapable and unchangeable: for Johnson, therefore, guilt endured, and salvation must ever be in doubt. This perverse vitality of his past is well illustrated by the remarkable episode at Uttoxeter market when in old age he stood bare-headed in the rain for a

considerable time to expiate an act of disobedience to his father in his youth. It provides a basis too for Sir Joshua Reynolds's remarkable observation that the gesticulations appeared as if they were meant to reprobate his past conduct.

This picture of Johnson's mental suffering is of course only one aspect of him, but we cannot fully appreciate the light without the shade, nor his achievements without knowing the difficulties he had to contend with. If I am right, the light and the shade are complementary. It was to find escape from his private gloom that he sought the Club and the drawing-room. It was despite nights passed in "oppressive misery" that, as Fanny Burney said, he had "more fun and comical humour and love of nonsense about him than almost anybody I ever saw"; and it was from an overpowering depression and lethargy that he roused himself to accomplish the *Dictionary* and the *Lives of the Poets*.

"Bozzy"

I need say little about James Boswell (1740–95), because his psychology has recently been so admirably summed up by Dr. Douglas Hubble.* Boswell was a cyclothyme, subject to the characteristic alternations of elation and depression, and no doubt it was this inherited psychopathic trait which brought his brother and his daughter to actual insanity. Dr. Hubble has traced the influence of external factors upon his variations of mood, and, in particular, has stressed the importance of his relation with his father. "Whenever James was in the company of Auchinleck the image of himself dwindled until it was no larger than a small boy, beloved and indulged by his mother, but intimidated by the stern and sarcastic tongue of Alexander Boswell." The effect of this conflict was to send Boswell in search of a father substitute who should be great and good, and one such was Johnson. Dr. Hubble concludes that "those who are tempted to take sides in this predetermined struggle between father and son will refrain when they recall that the direct outcome of the conflict was the immortal biography of Samuel Johnson."

One might perhaps go a little further and suggest that if Boswell was in search of a father, Johnson was looking for a son, and the psychological miracle was that these two great eccentrics exactly suited one another. Boswell had all the cyclothyme's vivacity, spontaneity, and warmth of feeling which in Johnson's character were absent or overwhelmingly inhibited. But these qualities alone would have been intolerable to Johnson: they were balanced and redeemed by Boswell's high intelligence and literary gifts. There may have been deeper emotional factors; but here, surely, is a sufficient psychological basis for that unique partnership through which each immortalized the other. Finally, I cannot refrain from quoting one other comment by Dr. Hubble: "Boswell was a drunkard. Boswell wrote two masterpieces of English literature—the one unsurpassed and the other unsurpassable. Boswell was a lecher. Boswell was unusually humane and generous. Boswell was a buffoon. Boswell was the friend of Johnson, of Burke, of Reynolds, and of Paoli—all of whom loved him. Those who find such contrasts irreconcilable have long lost the power of self-examination."

The Flea that Became an Eagle

The eighteenth century produced several mad poets: Collins, Smart, Cowper, and Clare—who just comes into it—all became insane. Christopher Smart (1722–71) is unique in that his poetry was improved by his madness. Dr. Johnson, when asked whether Derrick or Smart was the better poet, replied: "Sir, there is no settling the point of precedency between a louse and a flea." Except for a few lines such as his verses *On an Eagle Confined in a College Court*, Smart wrote nothing before or after his mental breakdown that could be quoted against Johnson's dictum, and, however he may have appeared to himself, nobody else pictured him soaring among the mountain-tops of poetry. He became insane, and the miracle that so much puzzled Browning occurred—he wrote *A Song to David*. The flea for a time became an eagle.

It is from Johnson that we learn much of what is known about Smart's madness as it appeared to others, and Boswell records the following conversation between Johnson and Burney. "Burney: 'How does poor Smart do, Sir; is he likely to recover?' Johnson: 'It seems as if his mind had ceased to struggle with the disease; for he grows fat upon it.' Burney: 'Perhaps, Sir, that may be from want of exercise.' Johnson: 'No, Sir; he has partly as much exercise as he used to have, for he digs in the garden. Indeed, before his confinement, he used for exercise to walk to the ale-house, but he was *carried* back again. I did not think he ought to be shut up. His infirmities were not noxious to society. He insisted on people praying with him; and I'd as lief pray with Kit Smart as anyone else. Another charge was that he did not love clean linen; and I have no passion for it.'" Smart was a cyclothyme: he himself said, "I have a greater compass both of mirth and melancholy than another." His disorder is easy to diagnose from his poem *Jubilate Agno*—"Rejoice in the Lamb"—which was written in a madhouse and which shows all the features of maniacal excitement. In the *Jubilate* the spate of ideas sweeps away both sound and sense, and the process of mental association occurs so readily as to be poetically meaningless. The mere sound or clang of words is sufficient to link them together, or the arbitrary apposition of a person and an animal, bird or plant acquires for the poet a spurious significance.

A Song to David, on the other hand, evidently written at the end of Smart's confinement when he had almost recovered, is a true poem, though even here the mood of extreme elation and a certain looseness of the texture of ideas show that the mental storm had not quite subsided. But the after-swell gave him a heightened emotional tension, an associative aptness and a feeling for words that he had never possessed before.

Then he recovered. The eagle became a flea again; or, it would be truer to say, Pegasus lost his wings and reverted to a nag, and Smart's verse ambled along at its habitual jog-trot for the few years of his life that remained.

Bill Sikes and Nancy

Much might be said about the relationship between the personal conflicts of Charles Dickens (1812–70) and his writings, but I can now deal with only two aspects of his temperament—his cyclothymia and his sado-masochism, both stressed by Mr. Edmund Wilson in his study of Dickens's psychology.* Dickens was undoubtedly a cyclothyme. His moods of depression do not seem to have been very frequent, but they were quite characteristic. His son, Sir Henry Dickens, speaks of his father's "heavy moods of deep depression, of intense nervous irritability, when he was silent and oppressed." Dickens himself more than once describes his feelings in his letters. "I am sick, giddy and capriciously despondent," he wrote to Forster; "I have bad nights, am full of disquietude and anxiety." Six

The New Statesman and Nation, December 28, 1946, p. 485.

The Wound and the Bow, 1941.

months later he told Georgina Hogarth, "My wretchedness just now is inconceivable." While staying at Bonchurch in 1849, writing of himself as "the Patient," he said: "If he have any thing to do requiring thought and attention this overpowers him to such a degree he can only do it in snatches." He speaks of "extreme depression of mind and a disposition to shed tears from morning to night . . . a dull stupid languor. He has no purpose, power or object in existence whatever." The obverse of these phases of depression was his prevailing mood of elation, which gave him his enormous gusto and from which he derived his energy, which at first was canalized into his prolific inventiveness, in later life feverishly squandered in his readings, and always overflowing into long walks, parties, and amateur theatricals. It was his cyclothymic temperament, too, that enhanced his great sensibility, which made him respond with far more feeling than the average man both to his own experiences and to the sufferings of others. This sensibility was in turn heightened by the vividness of his memory.

Blent with Dickens's cyclothymia was his sado-masochism, which has been analysed especially by Mr. Edmund Wilson. Perhaps having been brought up to regard Dickens as a monument of Victorian respectability and normality, most of us have never achieved sufficient detachment to appreciate this element in him. Though more obvious in some than in others, it runs like a scarlet thread through all his writings. Here, for example, are the instances of violence that occur in one novel, *A Tale of Two Cities*. Dr. Manette spends years in the Bastille; Charles Darnay is on trial for his life; Jerry Cruncher pursues the grim trade of a resurrectionist; the Marquis de St. Evremonde carelessly runs over and kills a child, and is himself murdered in revenge. His brother has raped the sister of Mme. Defarge and killed her brother, as a result of which their father died of a broken heart. Scenes of revolutionary violence dominate the story; the Bastille is stormed and the guillotine falls incessantly. Finally, Mme. Defarge is shot and killed by Miss Pross, and Sydney Carton and the little sempstress, both innocent, are executed together. There is almost as much violence in *Barnaby Rudge*, in which the Gordon Riots take the place of the French Revolution and the sacking of Newgate corresponds to the storming of the Bastille. In this tale execution is personified in Dennis the hangman. Mr. Harold Nicolson has pointed out how often beheading figures in Sam Weller's jokes, and Mr. Edmund Wilson has stressed the large part played by prisons in Dickens's stories. A more personal and refined kind of cruelty is exemplified by the behaviour of the Murdstones to David Copperfield, Squeers to the boys at Dotheboys Hall, and Quilp to his wife.

This emphasis upon violence and cruelty in the novels was only the reflection of a similar preoccupation in Dickens's own life. One of his favourite recreations in Paris was to visit the Morgue. He went to public executions at home and abroad—and wrote to *The Times* to protest at the spectacle. Wherever he travelled he made a point of visiting the prisons. And when he went to the Zoo he was so fascinated by the spectacle of the snakes being fed with live animals and birds that he could not drive it from his mind for a long time.

Dickens's death was so much the outcome of what it is fashionable to call psychosomatic factors that his latest biographer, Mr. Hesketh Pearson, with some justice describes it as *felo de se*. Soon after he was fifty he began to get warnings of circulatory disorder, in spite of which he carried out an American tour of his readings with characteristic energy. Back in this country in the following year, he decided to add to his repertoire the episode in *Oliver Twist* in which Bill Sikes murders Nancy. Probably his cerebral arteriosclerosis was already weakening his control over his feelings and allowing his sado-masochism more overt expression. It was still projected into the world of his imagination, but he was identifying himself with his impulses more closely than in his books, for now he was acting the scene and himself impersonating both the murderer and his victim. Many of his friends who saw him do it privately were horrified, and Forster tried to dissuade him from it; but he toured the country imparting, says Mr. Pearson, "to the murder scene such a sense of horror that the audience were semi-paralysed, and sat with blanched faces in frozen silence." It was noted that these readings put his pulse up to 120. Before long he developed a sense of deadness in the left side of the body, and the readings were abandoned. The next year he died of a stroke at the age of 58.

Conflict and Creativeness

How far do the characters of the strange beings whose lives are here briefly considered help us to disentangle "that subtile knot which makes us man?" What part did their mental abnormalities play in their creative genius? What sort of poet and preacher would Donne have been without his death-wish? Would an emotionally mature Swift have written *Gulliver* or any of his satires? Is there any relation between Johnson's contortions and his common sense, his obsessions and his verbal precision; and would a stable Boswell ever have immortalized him? How much of Dickens would have been left without his hypomanic energy and his preoccupation with suffering? Clearly, no man is a great creative artist because he is a psychopath, but our subjects surely show that, given the necessary qualities of mind, more than one process which the psychiatrist calls pathological may be an essential element in the virtues of genius—and perhaps of the rest of us. But what in the mental sphere is the meaning of normal and pathological? Is normality more than a statistical myth? The vast appeal of many creative artists, even the abnormals like Donne, Swift, and Dickens, is to readers whose feelings have something in common with their own. The great artist is a medium through whom our own emotions are expressed, intensified, and illuminated, with results that depend upon their nature and upon our reaction to this heightened experience.

There is a quantitative factor in this which is worth considering. The genius of literature has higher intelligence, more intense and more highly differentiated feelings, a better memory, and a greater capacity for words than the rest of us, and these presumably depend upon a quantitatively richer organization of his nervous system. He also has a dynamic quality which often seems to raise even his madness to a higher power. His creativeness is the resultant of his inner tensions, in which, if he is to create at all, his integrative forces must at least from time to time balance his conflicts and disruptive impulses. Thus for many a genius life is an agonizing struggle from which he may emerge victorious, but which often ends in his destruction by his daimon, the inner fate of the Greeks. Where is man's daimon to-day? Is it the diencephalon, the site of the emotions, or the integrating power of the frontal lobe which, as Dr. Freeman recently said, "is necessary for creativeness as well as for neurosis"? Art and character spring from the relations between these two. Are they not perhaps the two winged horses of the soul, pictured by Plato in his parable being driven by the charioteer he rashly named Reason?

THE FATE OF THE FORESKIN

A STUDY OF CIRCUMCISION

BY

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It is a curious fact that one of the operations most commonly performed in this country is also accorded the least critical consideration. In order to decide whether a child's foreskin should be ablated the normal anatomy and function of the structure at different ages should be understood: the danger of conserving the foreskin must then be weighed against the hazards of the operation, the mortality and after-effects of which must be known. Though tens of thousands of infants are circumcised each year in this country, nowhere are these essential data assembled. The intention of this paper is to marshal the facts required by those concerned with deciding the fate of the child's foreskin.

Origins of Circumcision

Male circumcision, often associated with analogous sexual mutilations of the female such as clitoric circumcision and infibulation, is practised over a wide area of the world by some one-sixth of its population. Over the Near East, patchily throughout tribal Africa, amongst the Moslem peoples of India and of South-East Asia, and amongst the Australasian aborigines circumcision has been regularly practised for as long as we can tell. Many of the natives that Columbus found inhabiting the American continent were circumcised. The earliest Egyptian mummies (2300 B.C.) were circumcised, and wall paintings to be seen in Egypt show that it was customary several thousand years earlier still.

According to Elliot Smith circumcision is one of the characteristic features of a "heliolithic" culture which, some 15,000 years ago, spread out over much of the world; others believe that the practice must have arisen independently among different peoples. In spite of the enormous literature on the subject (well summarized in Hastings's *Encyclopaedia of Religion and Ethics*), we remain profoundly ignorant of the origins and significance of this presumably sacrificial rite. The age at which boys are circumcised varies widely in different races, from the Mosaic practice of circumcising at about the eighth day, to the custom in many African tribes of making circumcision part of an initiation ceremony near the age of puberty. Circumcision was introduced into Roman Europe with Christianity; little is known about its status in mediaeval Europe, but it was probably customary only amongst adherents of the Jewish faith until, with the rise of modern surgery in the nineteenth century, its status changed from a religious rite to that of a common surgical procedure.

Development of the Prepuce

The prepuce appears in the foetus at eight weeks as a ring of thickened epidermis (Fig. 1, a) which grows forwards over the base of the glans penis (Fig. 1, b). It grows more rapidly on the upper surface than the lower, and so leaves the inferior aspect of the preputial ring deficient (Hunter, 1935). At 12 weeks the urethra still opens on the inferior aspect of the shaft of the penis and the terminal part of the urethra has yet to be constructed. Arrest at this stage produces the glandular type of hypospadias, with the "hooded" prepuce only partially covering the glans.

From the inferior aspect of the glans a pair of outgrowths are pushed out and meet (the sulcus on the under aspect of the glans marks their fusion), so enclosing a tube which, becoming continuous with the existing urethra, advances the meatus to its final site. These outgrowths from the glans carry with them the prepuce on each side (Fig. 1, c), thus completing the prepuce inferiorly and forming the frenulum.

By 16 weeks the prepuce has grown forwards to the tip of the glans. At this stage (Fig. 1, d) the epidermis of the deep surface of the prepuce is continuous with the epidermis covering the glans, both consisting of squamous epithelium. By a process of desquamation the preputial space is now formed in the following manner (Deibert, 1933). In places the squamous cells arrange themselves in whorls, forming epithelial cell nests. The centres of these degenerate, so forming a series of spaces (Fig. 1, e); these, as they increase in size, link up until finally a continuous preputial space is formed.

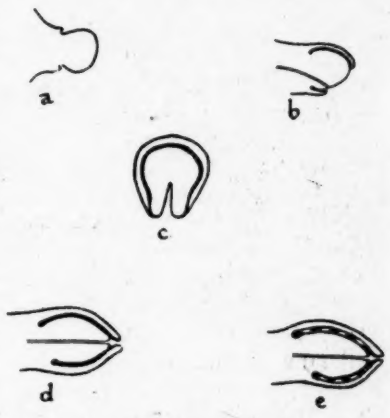

FIG. 1.—Development of prepuce. (*a*) Eight weeks; (*b*) sagittal section and (*c*) coronal section, 12 weeks; (*d*) 16 weeks; (*e*) at about term, compare Fig. 3.

The stage of development which has been reached by the time the child is born varies greatly. Figs. 2, 3, and 4 show sections of the penis in three full-term newborn infants; in Fig. 2 separation of the prepuce has not yet begun; in Fig. 3 separation is partial; in Fig. 4 separation is complete, though this, as will be shown, is uncommon at birth.

Anatomy of the Prepuce

The Younger Child.—The prepuce is still in the course of developing at the time of birth, and the fact that its separation is usually still incomplete renders the normal prepuce of the newborn non-retractable. (It will be seen that preputial "adhesions" is an inapposite term to apply to the incompletely separated prepuce, suggesting as it does that the prepuce and glans were formerly separate structures.) The age at which complete separation of the prepuce with full retractability spontaneously occurs is shown in Fig. 5, which has been constructed from observations of the prepuce in a series of 100 newborns and about 200 boys of varying ages up to 5 years. Of the newborns, 4% had a fully retractable prepuce, in 54% the glans could be uncovered enough to reveal the external meatus, and in the remaining 42% even the tip of the glans could not be uncovered. Of the older group 10% had been circumcised and a few had at some time had their prepuce "stretched"; the figures from which the diagram is constructed are therefore not precise, but they indicate with sufficient accuracy that the prepuce is *non-retractable* in four out of five normal males of 6 months and in half of normal males of 1 year. By 2 years about 20% and by 3 years about 10% of boys still have a non-retractable prepuce.

The fact that at these ages non-retractability depends upon incomplete separation of the prepuce can be easily demonstrated by running a probe round the preputial space, gently completing its continuity. It will then be found

that, although the prepuce is often somewhat tighter than in the adult, it is not tight enough to prevent retraction. This test was applied to a series of 54 boys aged from 2 months to 3 years who had been referred to hospital for circumcision, generally with a diagnosis of phimosis. In

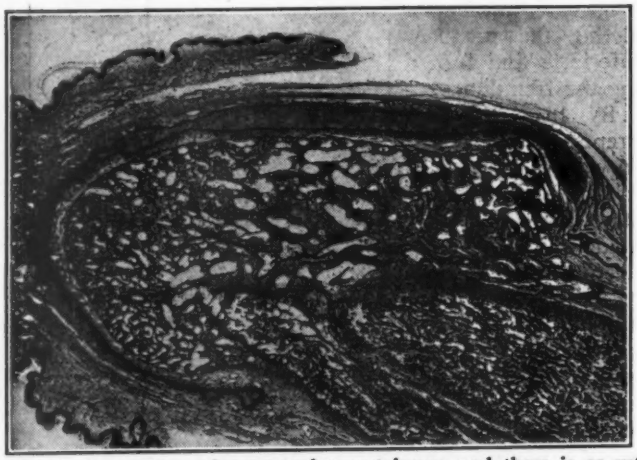

FIG. 2.—Separation of prepuce has not begun and there is as yet no preputial space.

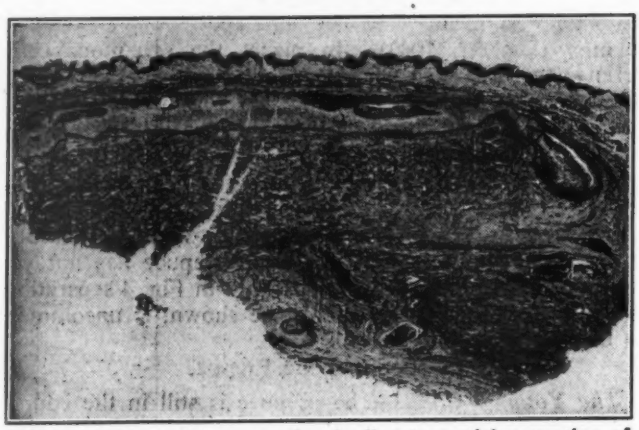

FIG. 3.—Foci of desquamation leading to partial separation of prepuce.

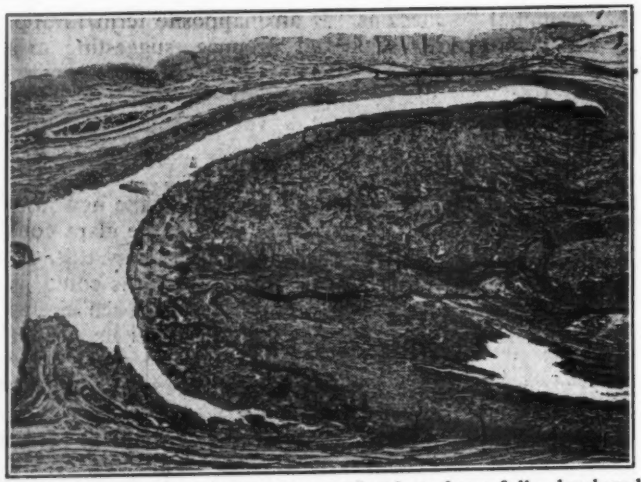

FIG. 4.—Separation of prepuce completed to form fully developed preputial space.

53 of the 54 the prepuce became easily retractable by this simple manipulation; in one 5-months-old infant this manœuvre failed because preputial separation had not advanced far enough to enable manipulation to complete the process. Although in this way the prepuce of nearly every infant can be rendered retractable, the procedure, necessarily involving the tearing apart of two as yet incompletely separated surfaces, causes some bleeding and opens the way to possible infection. For these reasons it is inadvisable as a routine procedure.

Prepuce of the Older Child.—Of 200 uncircumcised boys aged 5–13 years from three different schools, 6% had a non-retractable prepuce; in a further 14% the prepuce could be only partially retracted. In the majority of boys in this age group non-retractability depends upon the persistence of a few strands of tissue between prepuce and glans, so that minimal force is required to achieve retractability. In this age group, however, retraction of a hitherto unretracted prepuce discovers inspissated smegma, which, in contrast to that found in the younger child, is in some cases malodorous. This, together with the facts discussed under penile cancer, indicates that a different view ought to be taken of the non-retractable prepuce in the child over about 5 years, and that, whereas a non-retractable prepuce in the young child should be accepted with equanimity as normal, after about 3 years of age steps should be taken to render the prepuce of all boys retractable and capable of being kept clean.

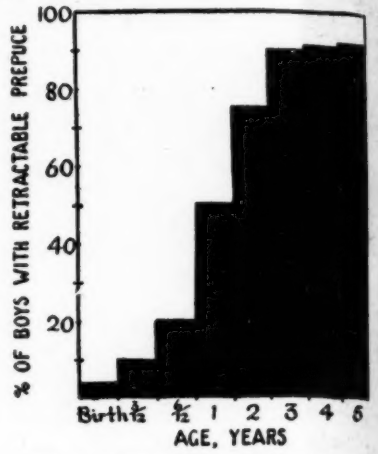

FIG. 5.—Proportion of boys of varying ages from birth to 5 years, in whom the prepuce has spontaneously become retractable. Note that it is uncommon for this to occur in the first six months

Function of the Prepuce

It is often stated that the prepuce is a vestigial structure devoid of function. However, it seems to be no accident that during the years when the child is incontinent the glans is completely clothed by the prepuce, for, deprived of this protection, the glans becomes susceptible to injury from contact with sodden clothes or napkin. Meatal ulcer is almost confined to circumcised male infants, and is only occasionally seen in the uncircumcised child when the prepuce happens to be unusually lax and the glans consequently exposed (Freud, 1947).

Incidence of Circumcision

Amongst the Western nations the circumcision of infants is a common practice only with the English-speaking peoples. It is, for the most part, not the custom in continental Europe or Scandinavia, or in South America. In England the collected data of various colleagues* who have kindly made observations on infants, school-children, and university students reveal wide variations as between different districts and between different social classes. For

*Dr. H. P. Broda, assistant school M.O., Cambridge; Dr. Eileen Brereton, assistant school M.O., Cambridgeshire; Drs. F. J. W. Miller and S. D. Court, Child Health Department, King's College, Newcastle-upon-Tyne; Dr. Margaret Patterson, assistant M.O.H., Cambridge; Sir Alan Rook, senior health officer, Cambridge University; Dr. R. E. Smith, medical officer to Rugby School. It is a pleasure to record my thanks to all these colleagues for their ready co-operation and many painstaking observations, and for generously allowing me to quote their findings.

instance, in Newcastle-upon-Tyne 12% of 500 male infants aged 12 months were circumcised; in Cambridge the comparable figure was 31% of 89 male infants aged 6 to 12 months. Boys coming from the upper classes are more often circumcised, 67% of 81 13-year-old boys entering a public school had been circumcised, whereas only 50% of 154 boys aged 5 to 14 in primary and secondary schools in the rural districts of Cambridgeshire, and 30% of 141 boys aged 5 to 11 in primary schools in the town of Cambridge, had been circumcised. The influence of social class is shown also by some figures analysed by Sir Alan Rook from a group of university students. Whereas 84% of 73 students coming from the best-known public schools had been circumcised, this was so of only 50% of 174 coming from grammar or secondary schools. Either the boys of well-to-do parents are suffering circumcision much too often, or those of poorer parents not often enough.

In view of the wide difference in the incidence of circumcised males in different parts of the country, it is difficult to give an average figure for the whole country. A conservative estimate of 20%, which is above the rate for Newcastle-upon-Tyne but well below that for all the other groups quoted, would mean that the number of circumcisions performed on children in England and Wales is of the order of 90,000 annually.

Mortality and Sequelae of Circumcision

Circumcision, like any other operation, is subject to the risks of haemorrhage and sepsis, and, where a general anaesthetic is employed, to the risk of anaesthetic death. The number of deaths presumed to be due to these causes is shown in the accompanying Table. The Registrar-General groups circumcision and phimosis together, but in view of the fact that "phimosis," as the term is commonly applied to infants, is physiological (see below) it is probable that the great majority of these deaths were attributable to operation rather than to any pathological condition necessitating operation

Table Showing Deaths in Children Attributed to Circumcision or Phimosis in England and Wales

	Under 1 Year	1–4 Years	Total, Under 5 Years
1942	12	4	16
1943	10	7	17
1944	10	6	16
1945	15	2	17
1946	16	3	19
1947	9	1	10

About 16 deaths in children under 5 years occur each year from circumcision. In most of the fatalities which have come to my notice death has occurred for no apparent reason under anaesthesia, but haemorrhage and infection have sometimes proved fatal.

Haemorrhage is not uncommon after circumcision. F. J. W. Miller and S. D. Court (1949, personal communication), who followed 1,000 infants in Newcastle-upon-Tyne for their first year, found that 58 were circumcised, and two of these bled sufficiently to require blood transfusion. In my own experience about two out of every 100 children circumcised as hospital out-patients will be admitted on account of haemorrhage or other untoward event. Blood losses in the first year are particularly apt to lead to anaemia, and several infants have been seen with severe iron-deficiency anaemia following haemorrhages after circumcision.

Reference has already been made to meatal ulcer, which, in so far as it is so much more frequent in circumcised male infants, should be counted a sequel of the operation.

Pathological Conditions of Prepuce for which Circumcision is Performed

The surprising variety of reasons why different doctors advise circumcision and other operations and manipulations on the prepuce can be found described in the long correspondence on the subject which ran in the *British Medical Journal* from August to November, 1935. Circumcision is sometimes undertaken in order to cure existing pathological conditions, sometimes in order to prevent various diseases from occurring at a much later date.

Phimosis

Since in the newborn infant the prepuce is nearly always non-retractable, remaining so generally for much of the first year at least, and since this normal non-retractability is not due to tightness of the prepuce relative to the glans but to incomplete separation of these two structures, it follows that phimosis (which implies a pathological constriction of the prepuce) cannot properly be applied to the infant. Further, the commonly performed manipulation known as "stretching the foreskin" by forcibly opening sinus forceps inserted in the preputial orifice cannot be justified on anatomical grounds, besides being painful and traumatizing. In spite of the fact that the preputial orifice often appears minute—the so-called pin-hole meatus—its effective lumen, when tested by noting whether or not a good stream of urine is passed, is almost invariably found to be adequate.

Infants with umbilical or inguinal hernia are particularly liable to suffer circumcision on account of "phimosis," but if this simple test is applied, rarely will any obstruction to the urinary flow be found present. Occasionally the preputial orifice is imperfectly related to the external meatus, so that the urinary stream balloons out the subpreputial space; this can be easily remedied by gently separating the prepuce from the glans in the region of the meatus by means of a probe. True phimosis causing urinary obstruction has been described (Campbell, 1948), but must be exceedingly rare: in the cases I have seen in which this diagnosis has been made, simple separation of the prepuce has shown that there was no constriction of the preputial orifice.

Through ignorance of the anatomy of the prepuce in infancy, mothers and nurses are often instructed to draw the child's foreskin back regularly, on the supposition that stretching of the foreskin is what is required. I have on three occasions seen young boys with a paraphimosis caused by mothers or nurses who have obediently carried out such instructions; for, although the size of the prepuce does allow the glans to be delivered, the fit is often a close one and slight swelling of the glans, such as may result from forceful efforts at retraction, may make its reduction difficult.

Balanitis and Posthitis

Inflammation of the glans is uncommon in childhood when the prepuce is performing its protective function. Posthitis—inflammation of the prepuce—is commoner, and it occurs in two forms. One form is a cellulitis of the prepuce; this responds well to chemotherapy and does not seem to have any tendency to recur; hence it is questionable whether circumcision is indicated. More often inflammation of the prepuce is part of an ammonia dermatitis affecting the napkin area. The nature of this condition was firmly established by Cooke in 1921, but is still not universally known. The urea-splitting *Bact. ammoniagenes* (derived from faecal flora) acts upon the urea in the urine and liberates ammonia. This irritates the skin, which becomes peculiarly thickened, while superficial desquamation produces a silvery sheen on the skin as if it were covered with a film of tissue paper. Such appearances are diagnostic of ammonia dermatitis, and inquiry will confirm that the napkins, particularly those left on through the longer night interval, smell powerfully of ammonia. Treatment consists in impregnating the napkins with a mild antiseptic inhibiting the growth of the urea-splitting organisms. For this purpose boric acid powder sprinkled over the napkins, or a rinse of 1 in 4,000 mercuric chloride or of the recently

introduced non-toxic substance "diaparene" (Benson *et al.*, 1949), are gratifyingly effective.

When involved in an ammonia dermatitis the prepuce shows the characteristic thickening of the skin, and this is often labelled a "redundant prepuce"—another misnomer which may serve as a reason for circumcision. The importance of recognizing ammonia dermatitis lies in the danger that if circumcision is performed the delicate glans, deprived of its proper protection, is particularly apt to share in the inflammation and to develop a meatal ulcer. Once formed, a meatal ulcer is often most difficult to cure.

Enuresis

A number of symptoms of obscure cause, such as enuresis, masturbation, habit spasm, night terrors, or even convulsions, have from time to time been attributed to phimosis, and circumcision has been advised. No evidence exists that a prepuce whose only fault is that it has not yet developed retractability can cause such symptoms.

It may be apposite at this stage to quote the reasons given by the mother for desiring her child's circumcision in a series of 54 infants referred to hospital by a doctor. In 39 infants the reason was a symptomless "phimosis," found on routine inspection by doctor, nurse, mother, or neighbour. In nine cases it was said that "he cries when he wets": five of these proved to be due to ammonia dermatitis; closer questioning of the others revealed either no connexion between when the baby cried and when he urinated, or merely that crying often started micturition. In three cases the foreskin was judged to be too long or redundant, and in a further three the reason was even more frankly cosmetic ("it looks funny") or was intangible ("we believe in it"). As has been stated earlier, in all except one of this group of 54 infants, phimosis was disproved, in so far as gentle manipulation enabled the prepuce to be retracted.

Conditions Prevented by Circumcision

Universal circumcision of male infants has been urged as a means of preventing the later development of a variety of conditions—paraphimosis, venereal diseases, penile cancer, and cervical cancer of women

Paraphimosis

Some idea of the importance of paraphimosis can be gained from figures from the Royal Victoria Infirmary, Newcastle-upon-Tyne, a hospital serving a large population in which, as has been mentioned, infants are circumcised less often than in the country generally. In the children's wards paraphimosis accounts for about seven out of a total of 800 male child admissions each year (0.9%): an appreciable number of these are found to be the result of the mother's obeying misguided instructions to retract her infant's prepuce forcibly. In the adult wards it accounts for about 10 out of a total of 5,000 male surgical admissions (0.1%), so that paraphimosis scarcely constitutes an important hazard to the uncircumcised male.

Venereal Disease

Although there is a common belief that the circumcised man runs a lessened risk of venereal infection, particularly syphilitic, there are few figures to support this. Lloyd and Lloyd (1934), who reviewed the published evidence and analysed their own figures, concluded that circumcision did not diminish the chance of a syphilitic chancre. Schrek and Lenowitz (1947) found that hospital patients gave a history of venereal disease equally often whether circumcised or not. Wilson (1947) has published figures showing that, of the men attending a Canadian Army venereal disease centre, the proportion of uncircumcised soldiers (77%) was higher than in the Canadian Army generally (52%), and concluded that the uncircumcised soldier is more prone to venereal infection. It may be, however, that since circumcision of infants is *de rigueur* in Canada, the uncircumcised man will tend to come from a lower social grade and thus to be more likely to expose himself to infection. The evidence seems scarcely to warrant universal circumcision as a prophylactic against venereal infection.

Penile Cancer

This subject merits careful appraisal, for it alone of the medical reasons commonly advanced for the universal circumcision of infants is capable of withstanding critical scrutiny. In England and Wales deaths from penile cancer number about 150 a year. The relation between this disease and antecedent circumcision has recently been reviewed by Kennaway (1947). All observers agree that circumcision in the first five years of life protects absolutely from penile cancer, and this applies not only to one group such as the Jewish but equally to the mixed races of the U.S.A. The reason for this preventive effect of early circumcision is not known: it is not due to removal of the cancer-bearing area, since the usual site of penile cancer, the sulcus behind the glans, is retained. If it is due to retained smegma or its decomposition products being carcinogenic, this effect must be of startling potency, since circumcision after the fifth year fails to prevent cancer occurring several decades later.

A clue to the problem may lie in the exceptionally low hygienic standards of patients with penile cancer, which has struck several observers. Dean (1935), reviewing 120 cases, writes: "Men with penis cancers gave the impression of being less intelligent, as a class, than other cancer patients. Not only had the majority ignored for long periods the precancerous state of physical annoyance, filth, and odoriferous discharge, but also it was not unusual for many to delay seeking advice until a large part of the penis had become affected with an ulcerating growth." The unusual frequency with which patients with penile cancer have had venereal disease has been demonstrated by Dean (1935) and by Schrek and Lenowitz (1947), these authors having come to the conclusion that this fact indicates again the significantly low standard of social hygiene of these patients. A further factor frequently present in patients with penile cancer is phimosis; although this is often the result of the growth, in many patients the prepuce has never been retractable (Lewis, 1931).

With these facts it may reasonably be contended that, if the uncircumcised male has a prepuce which he can retract and which he keeps clean, he is likely to enjoy the same immunity from penile cancer as his circumcised brother.

Cervical Cancer in Women

The low incidence of cervical cancer among Jewesses has led Handley (1947) to the conclusion that this disease is mainly caused by the introduction of irritant material by the uncircumcised husband during coitus. It should be a simple matter to put this theory to the test by noting whether the husbands of women with cervical cancer are more frequently uncircumcised than others. Meanwhile the evidence seems insufficient to warrant universal circumcision or preputiotomy, such as Handley advocates.

Minor Advantages of Circumcision

There remain a number of more or less trivial factors which are sometimes mentioned as reasons why infant circumcision is desirable: difficulties in keeping the uncircumcised parts clean, or the supposed aesthetic or erotic superiority of the shorn member. In order to fulfil the intention of this paper an inquiry on these points should have been made amongst a group of uncircumcised men. This was not attempted, although with regard to the last two of the factors mentioned it should be stated that whenever the subject has been broached in male company those still in possession of their foreskin have been forward in their insistence that any differences which may exist in such matters operate emphatically to their own advantage.

Moreover, if there were sensible disadvantages in being uncircumcised, one would expect that the fathers of candidates for circumcision would sometimes register their feelings in the matter. Yet in interviewing the parents of several hundred infants referred for circumcision I have met but one father who wished his son circumcised because of his own disagreeable experience of the uncircumcised state. The rest of the fathers were equally indifferent about the matter whether they themselves had been circumcised or not. Indeed, so little did the father's personal experience seem important that one-quarter of the mothers did not even know whether their husbands were or were not circumcised. These facts provide

some evidence that few uncircumcised men have cause to regret their state.

Conclusions

It has been shown that, since during the first few years of life the prepuce is still in process of developing, it is impossible at this period to determine in which infants the prepuce will attain normal retractability. In fact, only about 10% will fail to attain this by the age of 3 years. Of this 10% of 3-year-old boys, in most it will be found a simple matter to render the prepuce retractable by completing its separation from the glans by gentle manipulation. In a very few this may prove impossible and circumcision might then be considered a justifiable precaution. Higgins (1949), with long experience of paediatric urology, also concludes that circumcision should not be considered until "after the age of, say, 2 to 3 years."

The prepuce of the young infant should therefore be left in its natural state. As soon as it becomes retractable, which will generally occur some time between 9 months and 3 years, its toilet should be included in the routine of bath time, and soap and water applied to it in the same fashion as to other structures, such as the ears, which are customarily treated with special assiduousness on account of their propensity to retain dirt. As the boy grows up he should be taught to keep his prepuce clean himself, just as he is taught to wash his ears. If such a procedure became customary the circumcision of children would become an uncommon operation. This would result in the saving of about 16 children's lives lost from circumcision each year in this country, besides saving much parental anxiety and an appreciable amount of the time of doctors and nurses.

Summary

The development of the prepuce is incomplete in the newborn male child, and separation from the glans, rendering it retractable, does not usually occur until some time between 9 months and 3 years. True phimosis is extremely rare in infancy.

During the first year or two of life, when the infant is incontinent, the prepuce fulfils an essential function in protecting the glans. Its removal predisposes to meatal ulceration.

The many and varied reasons commonly advanced for circumcising infants are critically examined. None are convincing.

Though early circumcision will prevent penile cancer, there is reason to suppose that keeping the prepuce clean would have a like effect in preventing this disease.

In the light of these facts a conservative attitude towards the prepuce is proposed, and a routine for its hygiene is suggested. If adopted this would eliminate the vast majority of the tens of thousands of circumcision operations performed annually in this country, along with their yearly toll of some 16 child deaths.

My thanks are due to Dr. A. M. Barrett for pathological facilities.

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THE USE OF RADIOGRAPHS IN ASSESSING DISPROPORTION*

BY

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What has radiology done to help the obstetrician with his problem-cases of disproportion ? I do not doubt that some at this moment are muttering, "Nothing"; and perhaps a cynic is adding in ruder tones, "Less than nothing—it is a menace!" But I am equally sure that there are many others of a more sanguine disposition who take an opposite view; and one and all of us are, I hope, ready and willing to enter into a fair discussion concerning the merits of this new tool that has been put into our hands.

Why should there be any sharp difference of opinion; and why should there be, in some quarters, a distrust of radiography ? Chiefly, I believe, it is because radiologists as a class have little first-hand knowledge of obstetrics and often fail to appreciate the intricacies of childbirth. Similarly, the obstetrician seldom has an understanding of the technical difficulties encountered in the *x*-ray room and often demands the impossible from the radiologist. Too often, therefore, an early enthusiasm gives place to a distrust or even frank disbelief regarding the value of radiology in assessing obstetrical disproportion. I must therefore first plead for the most intimate and genuine co-operation between obstetrician and radiologist if progress in this field is to be made.

No discussion on the topic of disproportion can escape the criticism that it deals with one aspect only of dystocia and ignores other factors of capital importance. No notice is taken, for example, of the force and frequency of the uterine contractions, of the adaptation and realignment of the soft tissues—particularly those of the lower uterine segment—of the mouldability of the baby's head, or of the "give" of the pelvic joints. Least of all does radiology measure the patient's psychology or fortitude, nor, as I jocularly add to my students, does it judge the character, size, and proximity of the mother-in-law! Yet of all the causes of dystocia, disproportion is the most important; and it is therefore right that it should be singled out for special consideration.

Development of Radiographic Pelvimetry and Cephalometry

Looking back over the development of obstetric science, we see an early recognition of the importance of pelvic measurement. William Smellie knew full well the meaning of the flattened pelvic brim and the ominous significance of a projecting sacral promontory. Baudelocque, Michaelis, and others developed this science; and by the end of the nineteenth century pelvimetry was recognized as an essential part of every obstetrical examination.

Now comes the paradox. In modern times a new method of obtaining this supposedly vital information—and of obtaining it with undreamed-of accuracy—has been placed in our hands. Yet contemporaneously with this wonderful development there has arisen a generation of obstetricians who maintain that exact pelvic measurement is, generally speaking, unnecessary and even misleading and declare that the many components collectively making for eutocia

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on the one hand or dystocia on the other are so complex and varied as to render useless any system of prognosis that is based on one factor or even one set of factors. While I acknowledge the complexity of the subject I do not share these extreme opinions, which seem a counsel of despair, and which, I suspect, are sometimes voiced with insufficient knowledge of the position now reached in obstetric science. And among the iconoclasts one can sometimes perceive an inconsistency, for in those very centres where radiology is viewed with distrust or even antagonism there are in use antenatal charts in which space is provided for pelvic measurements obtained by clinical means. To quote my own words used on a previous occasion, "Disproportion in its widest sense is chief among the causes of difficult childbirth, and here it is that radiology gives most help. If we trouble to take pelvic measurements at all we show our belief in their value, and, if we so believe, then surely it is right to strive for fuller knowledge and greater accuracy."

Possibly some of the opposition to radiography has come from the fact that methods of pelvimetry have been, in some cases, only doubtfully accurate. Here it may be useful to point out that an error in positioning the patient during radiological examination inevitably results in the pelvic size appearing *smaller* than it really is, while in like circumstances the foetal head appears *larger* than it really is. In consequence an entirely erroneous appearance of disproportion may easily be presented, and a forecast made that is belied by subsequent events. But still more important in this connexion is the surprisingly tardy appreciation of the fact that adequate pelvic measurement requires far more than a mere recording of the conjugata vera—important as that time-honoured measurement is. A small brim conjugate may mean little if the pelvis is generous in other dimensions; and, conversely, a generous brim conjugate is no talisman against dystocia if serious diminution of capacity is present in other respects. It follows that, to be efficient, radiological examination must include examination of the pelvis in more than one projection.

Pelvic Shape

And now a word about pelvic shape as distinct from details of pelvic size. There is nothing new in saying that the "mechanics" of labour are largely governed by pelvic shape. But this truism took on a new meaning when Caldwell and Moloy by their admirable work with the radiographic stereoscope distinguished in more precise fashion certain trends that occur in pelvic architecture, and linked those trends with peculiarities in the manner of descent of the head. For example, they (and Herbert Thoms before them) associated the occipito-posterior descent of the head and face to pubes delivery with a pelvis in which the antero-posterior diameter was equal to, or exceeded, the transverse. But space does not allow me to elaborate this topic. This only I would say in passing: any system of pelvimetry must make allowance for the influence of pelvic shape as well as pelvic size if it is to form a basis for obstetrical prognosis.

Radiographic Technique

I shall not here discuss radiological technique. A bewildering variety of methods of pelvimetry and cephalometry have been devised; and, so long as the method is reliable, its choice must be left to the discretion of the radiologist. In passing I may remark that there seems to be an irresistible fascination for the mechanically minded enthusiast to introduce new methods, or new modifications of standard methods. And here I accuse myself, for if this is a sin I have a burden to bear. But such modifications as I have favoured have been directed to simplifying matters at the time of the examination, and I therefore deem my burden light.

Assessing Disproportion

I now come to the main topic—the methods of assessing disproportion. Let us start with the simplest of all: the radiologist views the radiograph and allows the general impression thus received to prompt him to an opinion regarding prognosis. This method—for lack of a better title let it be called the impressionistic method—has been developed to its fullest extent by Caldwell and Moloy and their followers (Caldwell, Moloy, and Swenson, 1939): and here I include Miss Meave Kenny, who has done excellent work on this line at the British Postgraduate Medical School (Kenny, 1944). By use of the Moloy stereoscope the relation of the foetal head to the maternal pelvis can be surveyed in three dimensions. Now, there is obviously much to be said in favour of this method, which, incidentally, enabled Caldwell and Moloy to break new ground and to study the influence of pelvic shape on the course of labour, to which reference has been made. I myself gladly acknowledge personal help from these workers and have made considerable use of their method. Nevertheless, it has disadvantages. It is exacting and time-consuming; moreover, not every observer has adequate stereoscopic vision. At the best the method is essentially impressionistic. Judgment is given on features rather than accurately measured or recordable findings; and obviously there is no certainty that different observers will agree on individual cases.

In 1935 Ball and Marchbanks, of New York, reported a method of estimating head volume and comparing it with pelvic capacity. Theoretically, it is probably the best of all methods, but the technical difficulties are formidable and few workers appear to have followed this line.

In this country, Nicholson, of Moreton-in-Marsh (Nicholson, 1938, 1943), developed a method of pelvimetry based on an original and ingenious method of utilizing parallax-shift measurements. He then evolved a method of measuring the available area at different pelvic levels, and from observations compiled in his own practice was able to assess the significance of various types and degrees of pelvic contraction. For example, a brim reduced to 90 sq. cm. was an indication, he believed, that a "level of uncertainty" had been reached. I much admire Nicholson's work, which, I would remind my listeners, was done as a side interest in a busy general practice. It has done good by focusing attention on the need for accurate measurement and providing, for the benefit of other workers, possible formulae by which the obstetrical value of the pelvis may be judged. Curiously, however, Nicholson has paid little heed to the size of the foetal head—a matter which, in my opinion, is almost as important as the computing of pelvic measurements; nor is it clear that he has sufficiently considered the variation of prognosis that derives from variation in pelvic shape.

In 1933 Thoms, of New Haven, described the construction of pelvic or, as I shall call them to avoid confusion, anatomical charts in which the outline of the pelvis was reduced to its true size and shape. This he did for both the brim outline (supero-inferior projection) and for the pelvic canal outline as seen in lateral profile. Some 12 years ago I was fortunate in being able to see Thoms's work at first hand, and was much impressed by its value. Soon afterwards I tried to add to the usefulness of Thoms's charts by superimposing on them an ellipse which

represented, as nearly as possible, the area that would be occupied by the particular foetal head that was to descend through that pelvis (Moir, 1941). This was done with regard to the pelvic brim and also the pelvis at the level of the ischial spines. A visual impression was thus conveyed of the difficulties (if any) that would be encountered during the descent of the head. This, I felt, was a welcome improvement on purely impressionistic methods of assessing disproportion.

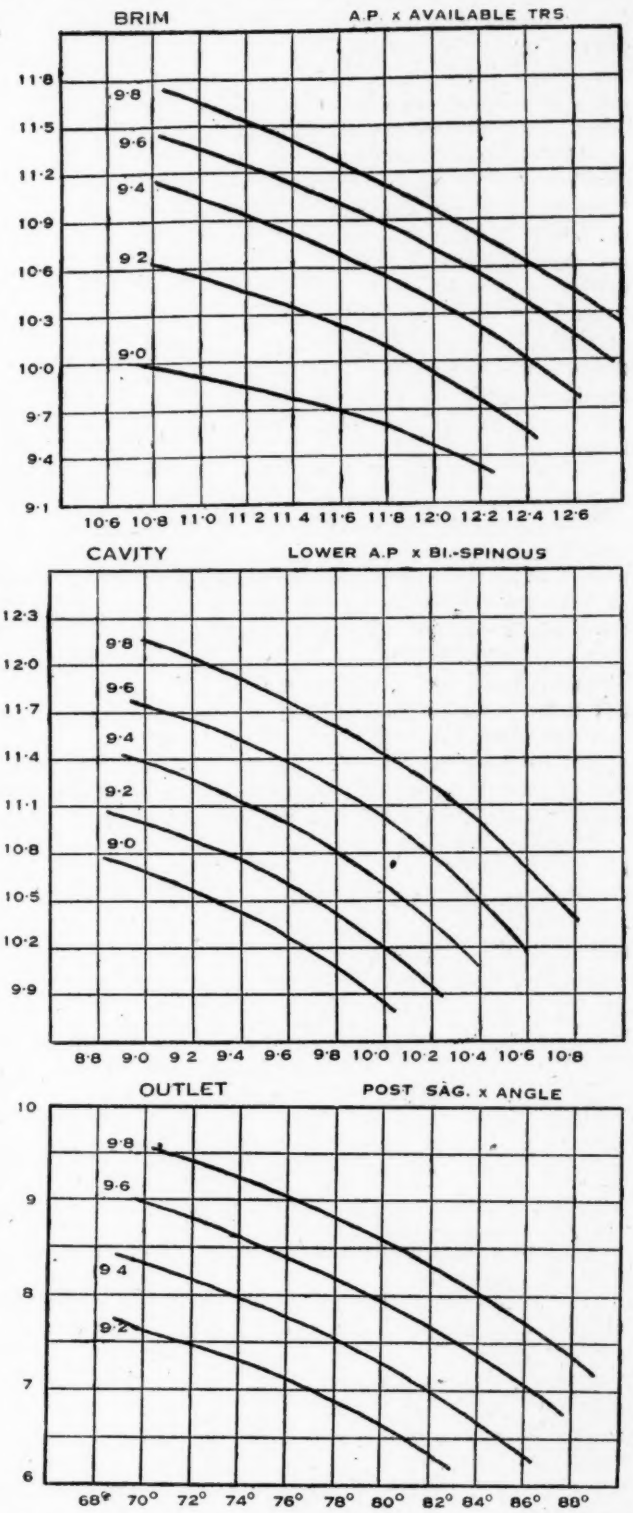
Rohan Williams (1943 ; Williams and Phillips, 1946) has contributed notably in this field by developing the anatomical chart method in new ways, particularly with regard to the lateral profile charts. In place of a static ellipse drawn on the charts he employs a circular disk (or set of variously sized disks) which he passes back and forwards over the chart to help him to form an opinion regarding the space available for the head at the various levels. This method has given excellent results in his hands, and in a series of cases of clinically suspect abnormality he has been able to show a correct forecast of labour in 83%, and a "substantially correct" forecast in 90%, of assessable cases. (The second group includes those in which the forceps operation was used, but without signs of cephalo-pelvic disproportion during labour.)

I cannot here do more than mention the names of Peter Allen, of New Zealand, and Morris, of Edinburgh, both of whom have made valuable contributions to this subject and clarified certain obscure features regarding pelvic measurement.

To return now to my own work, this branched off on lines somewhat different from those just described. I early realized that the construction of the anatomical charts was a time-consuming occupation and that, when all was said and done, they resulted only in providing a visual impression of certain features which could also be expressed in simple figures. I therefore evolved a method which, it seemed, would still give a desirable visual impression but which would be quicker and easier to operate. Details have been published elsewhere (Moir, 1946, 1947, 1949). Briefly, three standard charts on graph paper were constructed—one for the pelvic brim, one for the pelvis at the level of the ischial spines, and one for the outlet. Each chart had the antero-posterior measurements indicated along its vertical edge and the transverse measurements along its horizontal edge. It was thus an easy matter to pin-point at will the main size and shape characteristics of any pelvis. Now, by reviewing and correlating a large number of previously observed obstetrical cases in which full radiological examination had been made, it was possible to indicate on each chart the level at which difficulty was encountered with reference to the degree of head size. The end result was the incorporation in the charts of a series of lines or graphs by which one could tell in any particular case whether head size would encroach to a significant degree on pelvic size, or, to use more familiar words, whether dystocia from cephalo-pelvic disproportion was likely (Fig. 1).

These charts have now been in use for nearly five years and I have found them of very real help in summing up the mechanical features of an obstetrical case. They can be prepared without any great expenditure of time or effort, and can be included in antenatal records and accompany the patient to the labour room.

Critics sometimes ask whether this use of radiography has increased the incidence of caesarean section. To this I can reply that radiographic study of the pelvis has oftener influenced me against that operation. For example, on many occasions when pelvic contraction—even contraction of considerable degree—has been diagnosed by clinical



Charts Used in Cases of Suspected Cephalo-pelvic Disproportion (Measurements in Centimetres).—The chief pelvic measurements can be indicated by a "cross" made on each chart. If the cross lies above and to the right of the line representing the estimate of biparietal head size, mechanical difficulty is highly improbable; if it lies below and to the left, mechanical difficulty becomes probable and increases with the distance from the critical level. Forecast of difficulty is very accurate with regard to the brim chart. It is less accurate if based exclusively on findings in the cavity or outlet charts, for the reason that the lower pelvis may in some cases expand during labour.

means, the radiographic examination has shown that the foetal head was also small, and that while there was undoubted pelvic contraction there was no true disproportion. Indeed, it is quite surprising how often this is so: the small woman very often has the small baby. Occasionally, however, the charts reveal grave difficulty of which no adequate warning is given by clinical examination. In these cases I have hitherto usually adopted the policy of allowing a "trial of labour," for I have realized that the radiographic method has still to prove its worth. But this I can say with full assurance: the charts quickly "separate the sheep from the goats" (I trust this expression will not cause offence!), and show at once which patients are suitable for domiciliary delivery and which should be referred to hospital for careful supervision.

It is difficult to give statistics regarding the accuracy of the obstetric forecast, for there is, in practice, no uniformly applicable yardstick by which this can be judged. How is one to define, for example, what is meant by a difficult labour and what is meant by an easy labour? How is one to class the case in which there has been a long and obviously difficult labour but no evidence of cephalo-pelvic disproportion—for example, the primigravida with primary inertia followed, maybe, by a contraction ring? Again, what is one to say about the case in which an over-enthusiastic house-surgeon has applied forceps for indications that would generally be deemed inadequate? These and other difficulties in assessing results become obvious when statistics are being compiled; and no system of prognosis, however good in itself, can therefore give a forecast that approaches 100% accuracy. Nevertheless, having regard to these limitations, a strict analysis of 193 assessable cases of clinically suspect pelvic abnormality was attempted and gave the following results.

When easy delivery was indicated by the graphs the labour in 72% of cases was found to be short, spontaneous, and uneventful. This figure would be higher if borderline cases were included or allowance made for the "substantially correct" diagnosis as defined by Rohan Williams.

When difficult delivery was indicated by the graphs the labour in 86% of cases was found to be prolonged or to require operative assistance. When dystocia was indicated by contraction in the brim graph, as distinct from the cavity and outlet graphs, the accuracy was even higher.

These results were on an early series; with further experience a higher rate of correct forecast seems possible, and this, I hope, will be the subject of a future report.

Intra-partum Radiography

And now a brief note on intra-partum radiography. It is quite remarkable how little attention has hitherto been paid to this obvious use of the radiograph. By it the progress of labour can be observed, and much help given, for example, in the conduct of the "trial-labour" case. It will show whether the greatest diameter of the head has passed or has nearly passed through the narrowest part of the pelvis, and hence whether or not it is reasonable to subject the mother and the baby to further hours of "trial labour." One can only suppose that lack of radiographic facilities has been the reason for this failure to utilize a modern diagnostic method, and it seems to me that an obstetric hospital without radiographic facilities for the parturient woman is as much an anachronism as, say, a cardiological hospital without an electrocardiograph.

Conclusion

Finally, a word of warning. Let no one suppose that radiography provides a short cut to good obstetrics. The clinical problems involved are sufficiently numerous and varied to make any such supposition quite untenable. But, on the other hand, he is a bold man who would brush aside the help that radiography can give. To ignore its aid and to trust exclusively to clinical judgment in sizing up the problems presented in a border-line case of disproportion is, to my mind, a policy reminiscent of the alleged behaviour of the ostrich on the approach of danger.

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GROWTH OF THE FOETAL BIPARIETAL DIAMETER DURING THE LAST FOUR WEEKS OF PREGNANCY*

BY

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It has long been accepted that the foetal skull grows at a uniform rate during the last weeks of pregnancy, and this view is supported by the work of Scammon and Calkins (1929). They state that the foetal biparietal diameter increases by approximately 0.1 in. (2.5 mm.) a week during the last four weeks of pregnancy, and Reece (1935) based his method of estimating the age of the foetus on their growth curve of the biparietal diameter.

Three years ago the departments of radiology and obstetrics at the Newcastle General Hospital decided to try out a new method of cephalometry. In an attempt to check its accuracy by direct measurement of the foetal head after delivery the following course was adopted.

After each cephalo-pelvic estimate a copy of the radiologist's report, with the date of examination, was filed in a card index. A list of all patients examined, containing no other information than the expected dates of delivery, was kept by Dr. Ruth Fawcett, paediatric registrar to the maternity department, who then measured the biparietal diameter of each baby's head on the third day after delivery. This day was chosen because by that time it was considered that the effects of moulding would have disappeared (Chassar Moir, 1946). The measuring was done with a pair of engineer's callipers, and it was Dr. Fawcett's practice to measure each biparietal diameter three times, the mean of these three measurements being

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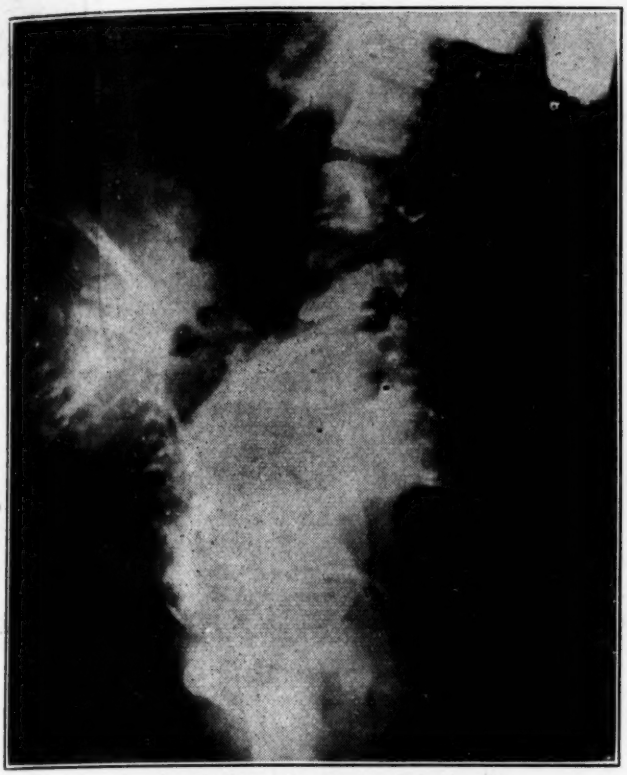

FIG. 1.—Radiograph taken on February 11.

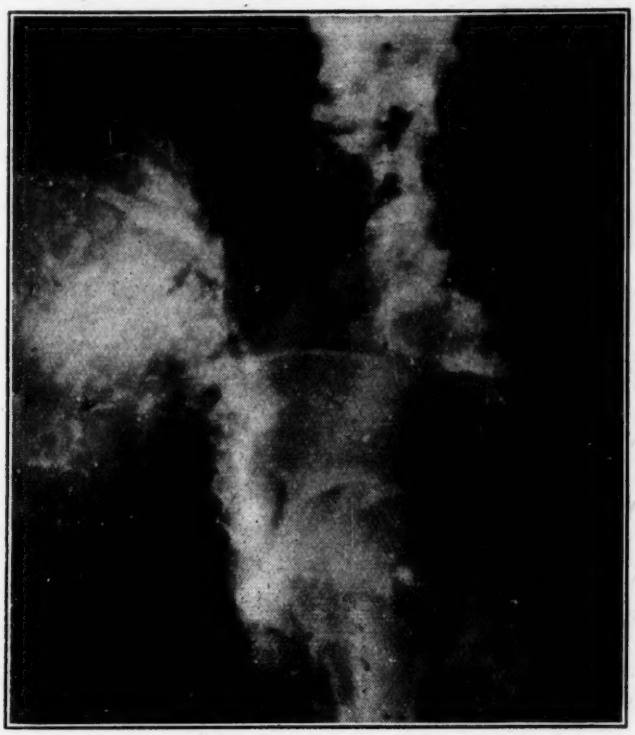

FIG. 3.—The foetal skull shadows in Figs. 1 and 2 are shown superimposed.

FIG. 2.—Radiograph taken on March 4.

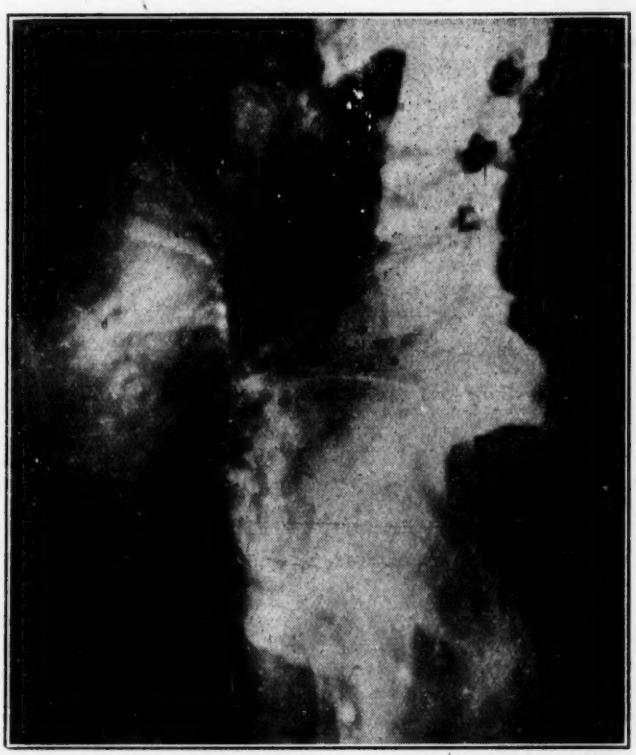

FIG. 4.—The maternal pelves are shown superimposed. The descent made by foetal head in 21 days is seen.

taken as the observed biparietal diameter of the baby's head. These were true independent observations, unbiased by any knowledge of the radiological estimations.

The biparietal diameter was chosen for the following reasons: (1) It, or its equivalent diameter of the greatest circular section of the foetal head, is recognizable in any projection of the foetal skull (Reece, 1935). (2) It is the most certainly defined diameter when measuring the baby's head after birth. (3) In the majority of cephalic

presentations the biparietal diameter of the foetal head engages with the antero-posterior diameter of the pelvic brim, which is usually the shortest diameter of the inlet.

Results

In 189 cases the biparietal diameters were estimated radiologically *in utero* and subsequently measured with callipers after birth; of these, 34 were examined twice, giving 223 radiological examinations.

Eighty-four cases were examined radiologically seven days or less before delivery, 13 of them actually on the day of delivery, so that the growth that could have occurred between the radiological and calliper measurements was negligible. These 84 cases were used, therefore, to check the accuracy of the method. The two sets of measurements are shown in Table I.

TABLE I.—*Biparietal Diameter of Foetal Skulls*

	Radiological Measurement	Calliper Measurement
No. of cases	84	84
Mean biparietal diameter	3·700 in. (9·4 cm.)	3·680 in. (9·35 cm.)
Standard deviation	0·138 in. (3·505 mm.)	0·124 in. (3·15 mm.)
Standard error of mean	0·015 in. (0·38 mm.)	0·014 in. (0·355 mm.)

It is therefore apparent that the radiological method gives an accurate estimate of the post-natal measurement, with a slight tendency to exaggerate it by 0.02 in. (0.5 mm.). In individual cases, however, there are certain discrepancies which require further consideration. The difference between the intrauterine measurement and the post-natal measurement for these 84 cases is shown in Table II. A negative discrepancy indicates that the intrauterine measurement was larger than the post-natal one.

TABLE II.—*Discrepancies in the Radiological Estimation of the Biparietal Diameter of the Foetal Skull*

Discrepancy in Inches	No. of Cases	Discrepancy in Inches	No. of Cases
−0·20 (−5·08 mm.)	1	+0·05 (+1·27 mm.)	12
−0·15 (−3·81 mm.)	7	+0·10 (+2·54 mm.)	10
−0·10 (−2·54 mm.)	20	+0·15 (+3·81 mm.)	3
−0·05 (−1·27 mm.)	13	+0·20 (+5·08 mm.)	1
0·00	17		

Mean discrepancy = −0·020 in. (−0·508 mm.)
Standard deviation = 0·087 in. (2·210 mm.)
Standard error = 0·010 in. (0·254 mm.)

From this table it is apparent that no error occurred greater than 0.2 in., and on the basis of these figures the following limits of accuracy for individual cases may be claimed: (1) 75% of all cases will be predicted within 0.1 in.; and (2) 95% of all cases will be predicted within 0.15 in. (3.8 mm.) of the calliper measurements. For groups of over 16 cases, however, accuracy to within 0.02 in. may be claimed for the mean reading.

It was observed during this investigation that, although the majority of biparietal estimations carried out during the last seven days of pregnancy were accurate to within 0.1 in., the calculated biparietals were always too large when cephalometry was performed earlier than two weeks before delivery. They were too large in every case, provided an allowance was made for growth of the biparietal diameter at a rate of 0.1 in. a week.

For example, if a biparietal diameter was estimated at 3.6 in. (9.14 cm.) at the 37th week of pregnancy, 0.3 in. (7.6 mm.) was added for growth (Scammon and Calkins, 1929) and the calliper measurement should have been 3.9 in. (9.9 cm.). In fact, however, the calliper measurement was found to be 3.6 in., and this disparity was true of every case examined during the 36th to 39th weeks of pregnancy.

There were therefore two possibilities to be considered either (*a*) our method of cephalometry was accurate during the last week of pregnancy, but inaccurate if performed earlier than two weeks before delivery, or (*b*) the foetal biparietal diameter did not grow during the last four weeks of intrauterine life. The latter concept was supported by the fact that the biparietal diameters estimated during the last four weeks were the same as the observed measurements carried out after delivery. We tried, therefore, to obtain further evidence to support this premise.

A group of cases were sent for cephalometry at the clinically estimated 36th week of pregnancy, and cephalometry was repeated four weeks later. The case sheets of this group were marked so that if the patient came into labour before the expected date emergency cephalometry could be performed.

The following is an example of one of these cases.

A primigravida aged 27 was sent for pelvi-cephalometry on February 11, 1949, and the foetal biparietal diameter was calculated to be 3.55 in. (9.02 cm.) on that date (Fig. 1). Twenty-one days later, on March 4, cephalometry was repeated, and the foetal biparietal diameter was calculated to be 3.6 in. (Fig. 2) —an increase of 0.05 in. (1.27 mm.), which is within the limits of experimental error. Eight days after this, on March 12, a female infant weighing 7 lb. 9 oz. (3.43 kg.) was delivered normally, and its biparietal diameter measured 3.55 in. There was thus no increase in the foetal biparietal diameter during the last 29 days of this pregnancy.

Fig. 3 shows the two previous films arranged so that the foetal skull shadows are superimposed, and it can be seen that they do accurately coincide. Fig. 4 shows the two maternal pelves superimposed, showing that the foetal head has made some descent during the 21 days between exposures.

In each of the 223 radiological estimations the amount of growth from the date of the examination until the date

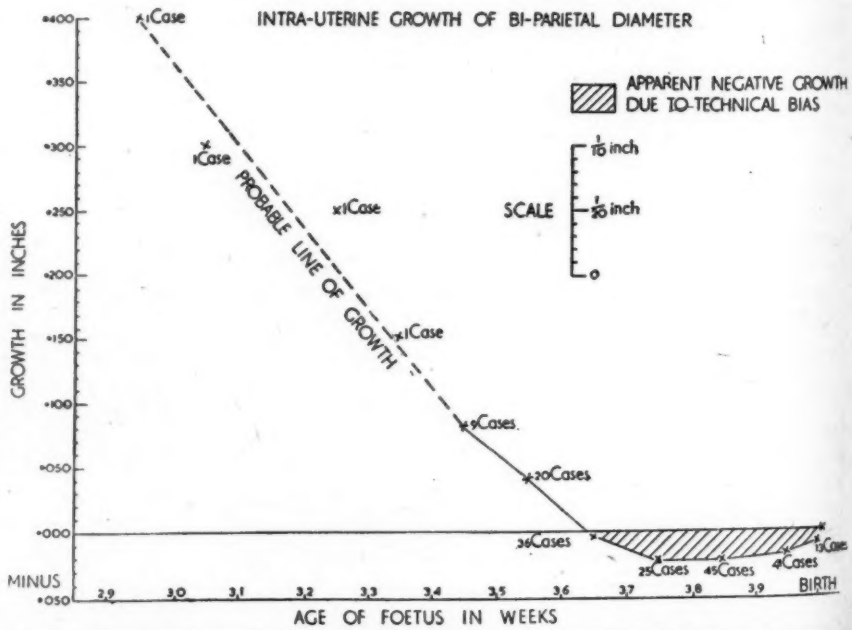

FIG. 5.—The total growth of the biparietal diameter of the foetal skull from the date of estimation until birth. The growth of the skull is estimated from the intrauterine radiological measurement and the actual calliper measurement three days after birth; the difference between these readings gives the growth in the intervening period.

of delivery was calculated from the two readings available. The cases were then grouped according to the number of weeks that elapsed between examination and delivery, and an average of each group was calculated. These growth figures are given in Table III. The standard error of the means of these groups is ±0.02 in.

TABLE III.—*Average Growth of Biparietal Diameter from Date of Examination to Date of Delivery*

Week of Pregnancy	Days Before Delivery	No. of Cases	Average Growth
40	Same day	13	−0·008 in. (−0·203 mm.)
39	1–7	71	−0·022 in. (−0·559 mm.)
38	8–14	45	−0·024 in. (−0·609 mm.)
37	15–21	25	−0·024 in. (−0·609 mm.)
36	22–28	36	−0·005 in. (−0·127 mm.)
35	29–35	20	+0·042 in. (+0·067 mm.)
34	36–42	9	+0·078 in. (+1·981 mm.)
33	43–49	1	+0·150 in. (+3·810 mm.)
32	50–56	1	+0·250 in. (+6·350 mm.)
31	—	—	—
30	64–70	1	+0·300 in. (+7·620 mm.)
29	71–77	1	+0·400 in. (+10·160 mm.)

The notable features of this table are: (1) The radiological method overestimates the size of the head by approximately 0.02 in. Consequently there is an apparent slight negative growth in the later stages (see Fig. 5). (2) There is no sign of a growth curve between the 36th and 40th weeks of pregnancy. (3) The growth curve between the 30th and 36th weeks cannot yet be accurately assessed. owing to scanty data, but even at this stage the biparietal diameter appears to grow at a rate of less than 0.1 in. a week.

We have now collected 34 cases in which radiological cephalometry was performed twice, with an interval of 21 days or more between the examinations. In 13 cases both radiological examinations were performed during the last 28 days of pregnancy, and the apparent growth between the two radiological examinations was 0.02 in. This figure is within the limits of our experimental error and could not therefore be definitely attributed to growth. Further details of these 34 cases are given in Table IV.

TABLE IV.—*Results of Two Radiological Examinations in Same Patient*

Time from First Radiological Examination to Date of Delivery	No. of Cases	Average Time between Two Radiological Examinations	Average Growth between Two Radiological Examinations
28 days or less	13	24 days	0·02 in. (0·508 mm.)
29–35 days	13	26 ,,	0·04 in. (1·016 mm.)
36 days or more	8	30 ,,	0·12 in. (3·048 mm.)

For reasons stated above we have estimated radiologically only the biparietal diameters, and have no observations to offer on the growth, or lack of growth, of the other diameters of the foetal skull during this period. In the absence of craniostenosis, however, it seems illogical to suppose that one diameter of the foetal skull should remain stationary while the others increase.

The investigation continues, and we are trying to estimate the foetal biparietal diameters at 32 weeks, again at 36 weeks, and then at term. Thereby we hope to observe the rate of growth between the 32nd and 36th weeks of pregnancy and to obtain further confirmation of the absence of growth between the 36th and 40th weeks.

Summary

Two hundred and twenty-three estimations of intrauterine foetal biparietal diameters, performed on 189 patients, are compared with calliper measurements obtained on the third day after birth.

Eighty-four cases were estimated radiologically within seven days of delivery.

In 34 cases radiological cephalometry was performed twice. with a minimum of 21 days between the examinations.

For individual cases the predicted measurement will be within 0.1 in. of the calliper measurement in 75% of cases, and within 0.15 in. in 95% of cases.

For groups of over 16 cases, accuracy of 0.02 in. may be claimed for the mean reading.

Radiological cephalometry overestimates the biparietal diameters by approximately 0.02 in.

There is no sign of a growth curve between the 36th and 40th weeks of pregnancy.

Grateful thanks are due to the staffs of the obstetrical and radiological departments of the Newcastle General Hospital; to Mr. F. Pearse, senior radiographer, who produced many of the radiographs of these cases; to Dr. Mary Buchanan and Dr. W. Ingham, who assisted Dr. Fawcett in her measurements; to Dr. Whately Davidson, radiologist in charge, Newcastle General Hospital, Mr. Linton Snaith, obstetrician in charge, Newcastle General Hospital, and Dr. Blair Hartley, honorary radiologist to the Christie Hospital and Holt Radium Institute, Manchester, for their criticism and encouragement in this work.

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THE SHORT OESOPHAGUS

A REVIEW OF 31 CASES

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Although the association of gastric hernia with shortening of the oesophagus is no new conception, it is far from widely appreciated that it can produce a variety of symptoms simulating carcinoma of the oesophagus, peptic ulceration of stomach or duodenum, cholelithiasis, and even disease of the coronary arteries. In this communication, therefore, we propose to review the literature briefly, to discuss the incidence of the condition relative to other lesions of the lower third of the oesophagus, and to point out associations with pregnancy and post-operative oesophageal stricture which we believe have not been previously recognized.

Isolated references to patients described as having a short oesophagus were recorded years ago by physicians from findings at necropsy (Bright, 1836; Bund, 1918; Bailey, 1919). The radiologist Akerlund (1926) seems to have been the first to differentiate hernia of the stomach through the oesophageal hiatus into three types according to the *x*-ray appearances (Fig. 1). In the oesophago-gastric variety (*a*) the oesophagus is redundant and tortuous, in the para-oesophageal (*b*) the oesophagus enters the stomach below the diaphragm and the gastric hernia passes up beside it, while in hiatal hernia with short oesophagus (*c*) the gastro-oesophageal junction is above the diaphragm but the oesophagus is not redundant.

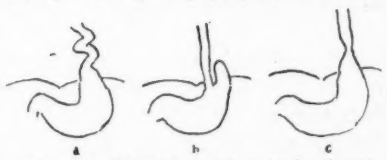

FIG. 1.—Varieties of gastric hernia through the oesophageal hiatus. *a*, Oesophago-gastric; *b*, para-oesophageal; *c*, with short oesophagus.

The first clinical records of a series of cases were published by Findlay and Brown Kelly (1931). Their nine patients were young children in whom regurgitation developed shortly after birth or when solid food was first taken. With barium swallowed in the horizontal position, oesophageal stenosis was found well above the diaphragm, and below it a pouch in which rugae were seen passing through the oesophageal hiatus and continuous with those of the stomach. Confirmation that this pouch was in fact part of the stomach was obtained from oesophagoscopy and biopsy. In the opinion of Findlay and Brown Kelly, this shortening of the oesophagus was congenital, although later Brown Kelly (1936) appears to have thought that in some instances the shortening was cicatricial and secondary to oesophagitis.

Shortly after the paper by Findlay and Brown Kelly, Monkhouse and Montgomery (1933) reported seven instances in adults. In the same year peptic ulceration in the lower end of the short oesophagus was conclusively demonstrated by Clerf and Manges (1934). They described 14 patients, children as well as adults, who had a short oesophagus and thoracic stomach, an ulcer being found in four. Biopsy in eight cases showed gastric mucosa above the level of the diaphragm. The presenting symptom in those with ulcer was burning pain at the lower end of the sternum, coming on immediately after taking solid food, and tending to radiate through to the back between the shoulder-blades or up to the root of the neck and sometimes down the left arm. It was relieved by alkalis, by regurgitation, or by drinking bland fluids, and was made worse by lying down. Dysphagia often did not appear until pain had been present for months or years. In those in whom no ulcer was demonstrated dysphagia was the presenting symptom, and in one patient in whom complete oesophageal obstruction was precipitated by impaction of a piece of apple it had been present from birth.

Clerf and Manges emphasized the importance of the observation made originally by Soresi (1919) in regard to diaphragmatic hernia in general, that to demonstrate part of the stomach above the diaphragm it was essential to lower the head of the table to allow the barium to flow back through the cardia. They found that the best view was obtained with the patient semi-supine in the right oblique position. Failure to use this technique meant failure to reach a correct diagnosis, as only the oesophageal stenosis was revealed by barium swallowed in the upright position, while the thoracic stomach, essential for the diagnosis, was missed. They also held that the lesion was a congenital shortness of the oesophagus accompanied by thoracic stomach—i.e., the cardiac part of the stomach had never descended below the diaphragm in course of development. A predisposition to peptic ulceration of the oesophagus existed because of reflux of gastric juice through the cardia, which was incompetent in its thoracic position. Increase or onset of pain on lying down was held to support this hypothesis.

The occurrence of short oesophagus with thoracic stomach and its association with oesophageal ulcer has been noted by many other observers (Dunhill, 1935, 1937; Chamberlin, 1938; Feldman, 1939; Cleaver, 1943). Among the later workers, Johnstone (1941) recorded seven examples in all of which a chronic peptic ulcer of the oesophagus was present. He held that shortening of the oesophagus occurred as a sequel to the ulceration and that the cardia was as a result drawn above the diaphragm. In support of this view he pointed out that all his cases were at or above middle age. On the other hand Dick and Hurst (1942) believed that a chronic ulcer of the oesophagus seldom occurred save as a sequel to congenital shortening of the oesophagus and thoracic stomach. In the few cases in which this abnormality was not demonstrated the ulcer was ascribed to the secretion of gastric juice by heterotopic gastric mucosa in the oesophageal wall. They considered that the symptoms of which a patient with a short oesophagus complained were as a rule those due to the ulcer, and if there were no ulcer the condition was latent and was found fortuitously on barium examination. It was also noted that pain was made worse not only on lying down but on bending, whereby intra-abdominal pressure was increased and gastric juice regurgitated into the oesophagus.

Polley (1941) had noted that in some cases pain had radiated into the neck and down the left arm. As a rule dysphagia occurred only after days or even weeks of pain. Intermission of symptoms was often observed, suggesting that spasm from the ulcer was the initial cause of dysphagia, while organic stricture gave rise to permanent dysphagia and required dilatation for its relief. In a recent review of the subject Allison (1948) discussed 78 examples of oesophageal ulcer or stricture all but two of which were associated with hiatal hernia and short oesophagus.

From the point of view of the radiologist the literature has been well reviewed by Smithers (1945).

In the present paper are described the clinical features of 31 patients with hiatal hernia and short oesophagus who were admitted to the Western Infirmary, Glasgow, over a period of 10 years.

Incidence

The frequency of short oesophagus relative to other common lesions in the lower third of the oesophagus is shown in Table I. Thus of 139 patients seen during a period of 10 years complaining of dysphagia due to obstruction in that site, 80 had carcinoma; achalasia was the cause in 31, and short oesophagus with benign stricture or active oesophageal ulcer in 26. Excluding the two cases due to swallowing of caustic, benign stricture was not seen in the lower third except in association with short oesophagus.

TABLE I.—*Frequency of Lesions of the Lower Third of the Oesophagus with Dysphagia (1937–46)*

Carcinoma	80 (all sites 203)
Achalasia	31
Hiatal hernia with short oesophagus	26 (+5 without dysphagia)
Fibrous stricture (caustics)	2

Short oesophagus was discovered during the barium examination of five patients whose symptoms of haematemesis or severe flatulence were unrelated to the oesophagus. Since this survey was made largely in retrospect, it is probable that some cases were missed. An attempt was made to re-examine all those in whom there was doubt about the cause of dysphagia in the lower third of the oesophagus, but three patients could not be traced.

It is certain that small sliding gastric hernia with shortening of the oesophagus occurs without symptoms, as it can be demonstrated when the appropriate radiological technique is employed. Kemp Harper (1946) put the incidence at 2% of all patients undergoing routine barium-meal examination. One of us (S. D. S. P.) confirmed this observation in 100 consecutive barium investigations.

Symptomatology

The age-and-sex incidence is shown in Table II, and is contrasted with that of achalasia and carcinoma of the lower third of the oesophagus. The age is that at the onset of symptoms in each group.

TABLE II.—*Age and Sex of Patients with a Lesion in the Lower Third of the Oesophagus*

Age at Onset	Short Oesophagus		Achalasia		Carcinoma	
	M	F	M	F	M	F
0–19 years ..	2	2	1	1	0	0
20–39 ,, ..	2	6	2	11	1	0
40–59 ,, ..	5	8	9	5	23	11
60–80 ,, ..	1	5	1	1	38	7
	10	21	13	18	62	18

Earlier workers found that symptoms associated with short oesophagus might appear at any age. In our series three patients had dysphagia from childhood, but in the majority no complaint was made before middle or late adult life, the oldest being 74. Only one case of cancer of the lower third of the oesophagus was observed in a person under 40 years of age, in a man of 26.

The sex incidence of short oesophagus (Table II), found to be about equal by Dick and Hurst (1942) and by Allison (1948), showed a preponderance of females in the ratio of 2 to 1 in our series. In achalasia this difference was less marked, while in carcinoma the ratio of males to females was 3.4 to 1.

The presenting symptom was pain in three cases, dysphagia in eight, and pain and dysphagia together in 13. This does not accord with the observations of Dick and Hurst (1942), who found that often pain alone was present, sometimes for years, before the onset of dysphagia. Two patients, without previous complaint related to the alimentary system, were admitted to hospital because of massive haematemesis. Analysis of the symptoms in our cases agrees for the most part with the clear descriptions by Clerf and Manges (1934) and later by Dick and Hurst (1942). Pain was complained of by 18 patients. In 13 instances it was felt at the lower end of the sternum, three times high in the epigastrium, and once each in right and left hypochondriac regions. It tended to radiate upwards behind the sternum and through to the back. Two patients complained of radiation to the neck and down the outer aspect of the arm—the left in one, the right in the other. In character it was burning, often coming on immediately after swallowing solid food, particularly meat or fibrous vegetables. It lasted for several minutes and was relieved either when the food was felt "to pass on into the stomach" or was regurgitated. In others the onset of pain was delayed for about 30 minutes and was relieved by regurgitation or by taking bland fluid. Alkali was often helpful. In addition to pain associated with food eight patients experienced pain on lying down or on bending forward. Five said that posture had no influence.

Dysphagia and Regurgitation.—Difficulty in swallowing solid food was felt by 26 patients, and 21 regurgitated food in varying degree. Complete obstruction to the passage of food was precipitated in two patients with partial stricture—in one by impaction of a piece of wood in a sausage, in the other by a piece of orange and again, two years later, by a raisin.

Haematemesis.—This occurred in nine cases. In five instances it was slight and recurrent, and in some consisted of altered blood. The other four patients were admitted to hospital as cases of emergency because of gross vomiting of blood; in two of them bleeding occurred without warning or any symptom of alimentary disorder.

There was one example of chronic haemorrhage with anaemia in the series.

Case 1.—A woman aged 36 had for over a year felt dull pain in the epigastrium relieved by food. No regurgitation. Stools were occasionally dark. Breathlessness, fatigue, and pallor had been present for some months, due to anaemia. Hb, 47%; R.B.C., 3.7 millions; occult blood was present in the faeces. A radiograph showed a short oesophagus and thoracic stomach but no stricture. No ulcer was seen in the oesophagus, stomach, or duodenum.

In this group a definite ulcer was located twice—once in the thoracic pouch of stomach, and once in the lower oesophagus. In the others an associated acute peptic ulcer of stomach or duodenum may have been responsible, as these lesions may be undetectable by radiology within a few weeks of the bleeding. The other possibility is haemorrhage from erosions in the thoracic pouch which are prone to occur because of congestion of the mucosa in that site. In two of this group dysphagia did occur later.

Flatulence.—This was a prominent complaint in four patients. Dysphagia was absent in two and minimal in two.

Case 2.—A woman of 56 had for at least 15 years complained of pain under the left costal margin and very severe flatulence after meals. In 1934 cholecystectomy had been performed without relief, no stones having been found. Peptic ulcer and spastic colon were diagnosed on subsequent occasions, but no proof of either of these lesions was found. In 1942 the pain was gnawing in character and was relieved by vomiting and by alkaline powder. No complaint of dysphagia was made. On her last admission in 1942 a radiograph showed a short oesophagus and a thoracic stomach. No oesophageal stricture or ulcer was seen. This was an *x*-ray diagnosis and was reached quite by chance so far as the clinician was concerned.

Intermission of the Symptoms.—This was characteristic, 21 patients agreeing that the severity of pain and difficulty in swallowing varied. Some lost their pain after months or years but were left with dysphagia, because of which they had to eat only food which could be very thoroughly masticated.

X-ray and Oesophagoscopic Appearances

In the earlier part of the period covered by this survey the actual barium swallow was as a rule given to patients in the standing position only. A typical picture of the result thus obtained is given in Fig. 2, which shows a partial stricture with irregular wall some distance above the diaphragm, the appearance resembling that of carcinoma. If, however, the patient is tilted in order to allow the barium to flow back into the oesophagus the existence of a portion of the stomach above the diaphragm becomes apparent (Fig. 3). It is also sometimes necessary to increase the intra-abdominal pressure by compressing the abdomen or by instructing the patient to strain. It is interesting to note, however, that in two cases in our series it was found impossible to reproduce these appearances on every occasion a barium examination was made, no evidence of hiatal hernia or short oesophagus being obtained.

In this series of 31 cases of short oesophagus and thoracic stomach a partial stricture of the oesophagus was present in 26, and 15 patients showed also an oesophageal ulcer. Thus five patients had a short oesophagus and a thoracic stomach without stricture, though subsequently a stricture did develop in two. Carcinoma was found in the thoracic part of the stomach once, and simple ulcer once.

Oesophagitis was found in varying degree over a distance of about an inch (2.5 cm.) proximal to the constriction in the lower oesophagus. The mucosa was generally engorged with superficial erosions, and radiating streaks of greyish exudate were conspicuous. In some cases there were granulations simulating malignant fungations. Active peptic

ulcers had a flat yellowish-white base with a narrow bright-red margin, and greyish-white scars marked the sites of healed ulcers. Where pronounced spasm or secondary fibrosis was absent the constriction was readily distended, revealing the typical rugose mucosa in the supradiaphragmatic gastric pouch; in others spasm or fibrosis produced varying degrees of resistance to dilatation.

FIG. 2.—Radiograph taken in standing position showing partial stricture with irregular wall some distance above diaphragm, resembling carcinoma.

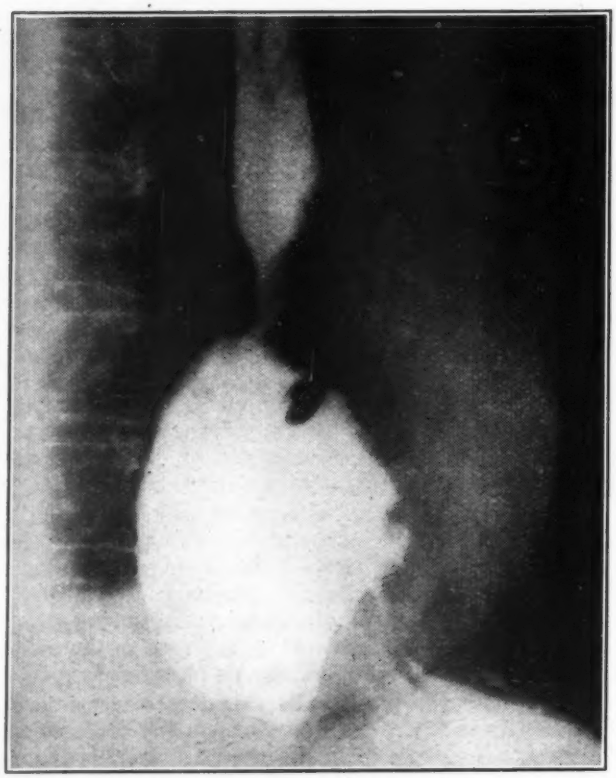

FIG. 3.—Radiograph taken while patient was tilted in order to allow the barium to flow into the oesophagus. A portion of stomach above the diaphragm is apparent.

The Short Oesophagus in Association with Other Conditions

Carcinoma in Thoracic Part of Stomach.—According to Dick and Hurst (1942) there is no unequivocal evidence that oesophageal ulcer undergoes malignant change. In 1934 Clerf and Manges reported an instance of cancer occurring not in the short oesophagus but in the thoracic stomach. Smithers (1945), reviewing the literature, quoted such a case recorded by Christiansen (1941) and another by Raven (1941), and added two of his own.

Case 3.—For three months before admission a woman aged 67 had progressive dysphagia until only fluids could be swallowed. Food was felt to stick at the lower end of the sternum and was accompanied by a burning sensation. Regurgitation was frequent, with blood present on several occasions. Appetite was very poor from early in the illness. A radiograph showed a short oesophagus and a stricture. A thoracic stomach was present in which there was a persistent ragged outline at one point. Oesophagoscopy revealed a stricture 27 cm. from the teeth, and a specimen taken for biopsy showed gastric mucosa infiltrated with adenocarcinoma. This patient died in another hospital, and no necropsy was made.

Peptic Ulcer in Stomach or Duodenum.—Seven out of 31 patients had a history of peptic ulceration of the stomach or duodenum.

Case 4.—A man aged 54 was admitted in February, 1941, because of haematemesis from a duodenal ulcer which had given rise to symptoms for three years. Between February, 1941, and July, 1943, he was readmitted on three occasions because of haematemesis. At the time of admission in 1943 there was much vomiting due to pylorospasm. Within a few days he began to complain of burning pain behind the sternum and to regurgitate solid food. A radiograph showed a thoracic stomach and a short oesophagus to be present along with an oesophageal ulcer and a tight stricture. For about four weeks all solids and much fluid were regurgitated. Thereafter he improved rapidly, and, while occasional dysphagia occurred, he remained well without dilatation until readmitted in December 1945, with a haematemesis which proved fatal. Post-mortem examination showed that the fatal bleeding had taken place from a duodenal ulcer, while the scar of a healed ulcer was observed in the oesophagus 5 cm. above the cardia. There was no stricture, and shortening of the oesophagus was not noted. As the pathologist had unfortunately not been informed of the radiological findings the oesophageal hiatus was not measured.

This case is of interest in that it demonstrated that extreme dysphagia lasting for several weeks was caused by spasm without organic stricture.

Dysphagia after Abdominal Operation.—In three of the cases in this series persistent dysphagia which had lasted for years developed within a few days of an abdominal operation.

Case 5.—A man aged 51 was operated on in July, 1943, for perforation of a duodenal ulcer. After operation continuous vomiting took place, for which gastro-enterostomy was performed six days later. Within a few days he felt food sticking at the lower end of the sternum. Pain was slight, of a burning character, and always at the same spot. These symptoms were at first intermittent, but dysphagia became very marked in October, 1943, and a barium swallow showed a short oesophagus, a thoracic stomach, an oesophageal ulcer and stricture. Oesophagoscopy revealed a partial stricture 28 cm. from the teeth. No break of mucosa was seen and no biopsy was made. Apparently because it was felt that carcinoma could not be excluded, it was decided to give a course of deep therapy, which was soon discontinued at the radiologist's request

When seen in 1946 he had no pain, but still had to chew solid food very carefully. A radiograph again showed a short oesophagus, a thoracic stomach, an oesophageal ulcer, and stricture.

Case 6.—A woman aged 58 developed dysphagia three days after an operation for gall-stones in 1936. Food stuck at the lower end of the sternum, associated with pain in the epigastrium and left hypochondrium. It was worst about half an hour after food and was relieved by regurgitation, which occurred frequently. These symptoms were notably intermittent, even from meal to meal. *X*-ray examination in the upright position only revealed a stricture in the lower third of the oesophagus, while oesophagoscopy showed a "fungating growth" starting 30 cm. from the teeth and becoming obstructive near the cardia. No biopsy was made, and *x*-ray treatment for carcinoma was given. She was seen by us in 1946, when she was fairly well but required the passage of bougies at frequent intervals. Her pain, which was still present, was relieved by sodium bicarbonate. She had had slight haematemesis in 1945. A radiograph in 1946 disclosed a short oesophagus with ulcer, stricture, and thoracic stomach. Oesophagoscopy showed an ulcer proximal to the stricture 25 cm. from the teeth, and gastric mucosa was obtained on biopsy from the supradiaphragmatic pouch.

Case 7.—A man aged 37 was operated on for a perforated duodenal ulcer in 1940. Within a week of this he felt discomfort at the lower end of the sternum on swallowing solid food, which stuck momentarily at that site, but there was no regurgitation. A barium swallow in the upright position was stated to indicate nervous spasm. The symptoms continued intermittently till September, 1945, when he had a bout of severe substernal pain and marked dysphagia with regurgitation of solid food. A radiograph at this time showed a short oesophagus, a thoracic stomach, an oesophageal ulcer, and stricture. Oesophagoscopy revealed a stricture 32 cm. from the teeth and a short oesophagus. Biopsy was not made. Bougies were passed with good effect, and in April, 1946, he stated that he was able to swallow most things if well masticated.

Only three instances of persistent dysphagia appearing first after operation were found in the hospital records over 10 years. Oesophageal ulcer and benign stricture were present, associated in every case with a short oesophagus and a thoracic stomach.

Pregnancy

The occurrence of dysphagia in the last three months of pregnancy has been described by Vinson (1923, 1924). The initial symptoms were "vomiting" and pain behind the lower end of the sternum, followed within a day or two by dysphagia, for which the passage of bougies was required. Haematemesis was common and even proved fatal in some cases. Vinson believed that these patients developed an oesophageal stricture because of frequent vomiting. From his records dysphagia was still present months after the onset.

In five of the present series the onset of oesophageal symptoms occurred in the later months of pregnancy.

Case 8.—A woman of 36 developed dysphagia in the sixth month of pregnancy. It was accompanied by a burning pain at the lower end of the sternum which passed through to the back. Symptoms intermitted with almost complete relief for several weeks at a time. In 1933 radium treatment was given for carcinoma of the oesophagus, the diagnosis being based on an oesophagoscopic examination which showed an "ulcerated growth" 30 cm. from the teeth and an obstruction to barium at that level. No biopsy was made. After treatment symptoms continued as before, but the patient's general condition remained quite good. In 1946 *x*-ray examination revealed a short oesophagus with ulcer, and oesophagoscopy showed the oesophagus to be dilated, with a conical approach to a fibrous stricture 26 cm. from the teeth. A whitish scar was visible on the posterior wall at the entrance to the stricture.

Case 9.—Just before the birth of her baby in 1940 a woman aged 36 felt that food stuck at the lower end of the sternum; there was no pain. Regurgitation was frequent at first. In 1940 *x*-ray examination in the upright position revealed stricture of the lower third of the oesophagus, and oesophagoscopy showed an annular obstruction 31 cm. from the teeth without breach of mucosa. No biopsy was made. Cancer was diagnosed and *x*-ray therapy was given. Some months later the stricture was dilated by bougies with complete relief. When seen in 1946 she was very well and could eat anything without dysphagia provided she chewed it thoroughly and had no emotional disturbance. A radiograph revealed a short oesophagus, a thoracic stomach, an oesophageal stricture, and an ulcer.

Case 10.—A woman aged 38, in the seventh month of pregnancy in 1942, quite suddenly felt solid food stick at the lower end of the sternum. At the same time she was conscious of a burning pain at this site immediately after taking food. Symptoms were rather worse after delivery and she lost weight. Regurgitation was frequent and gave relief. *X*-ray examination showed that barium was held up 7 cm. above the diaphragm, where there was a smooth stricture. Below this there was a globular enlargement in which mucosal markings were present, continuous with those of the main body of the stomach below the diaphragm, but no ulcer was seen. Oesophagoscopy was not done. In 1946 she was fairly well, but had to be careful what she ate. *X*-ray findings were similar to those in 1942.

Case 11.—This patient, aged 39, developed difficulty in swallowing solid food during the last weeks of pregnancy in 1944. Regurgitation was frequent but there was no pain. *X*-ray examination revealed a short oesophagus, a thoracic stomach, a small ulcer of the oesophagus, and a stricture. In April, 1946, she still had difficulty in swallowing.

Case 12.—This woman, at the age of 41 and during the last two months of pregnancy, felt a burning pain in the mid-sternal region which radiated to the back. It started 10 minutes after taking solid food, but was also present at night, when it was so severe that she could not lie flat. There was no regurgitation, but food tended to stick at the site of the pain. Nineteen years after the onset of symptoms, which were intermittent, she suddenly began to regurgitate all food and drink. A barium swallow showed complete obstruction in the lower third of the oesophagus. The diagnosis of foreign body was made and a piece of orange was removed from the lower end of the gullet with immediate relief. When seen in April, 1946, she said that some pain and dysphagia were still present. *X*-ray examination revealed a short oesophagus and a thoracic stomach, with partial stricture of the oesophagus, but no ulcer could be demonstrated.

The findings in these five patients are summarized in Table III. All the patients were over 35 and symptoms started between the fifth and last months of pregnancy.

TABLE III.—*Dysphagia in Pregnancy*

Case No.	Dysphagia	Pain	Month of Pregnancy	Age at Onset	Duration of Symptoms (Years)	*X*-ray Findings in 1946
8	+	+	6	36	13	S.O., T.S., Str., U.
9	+	0	9	36	6	S.O., T.S., Str., U.
10	+	+	7	38	4	S.O., T.S., Str.
11	+	0	9	39	2	S.O., T.S., Str., U.
12	+	+	7	41	19	S.O., T.S., Str.

S.O. = Short oesophagus. T.S. = Thoracic stomach. Str. = Stricture. U. = Ulcer.

The duration of symptoms ranged from 2 to 19 years. Dysphagia was present in all, and pain behind the lower end of sternum in three. *X*-ray examination revealed short oesophagus, thoracic stomach, and oesophageal stricture in all, with ulcer also present in three.

Vinson attributed the stricture to the presence of gastric juice in the oesophagus resulting from excessive vomiting, but the development of dysphagia and regurgitation in our

series was in no instance preceded by vomiting. On the facts it seems reasonable to argue that the development of the stricture during pregnancy is due to increased intra-abdominal pressure at that time causing reflux of gastric juice into the oesophagus through a cardia incompetent because of its position in the thorax. The age of the patients in relation to pregnancy, the youngest being 36, is possibly another factor predisposing to laxity of the oesophageal hiatus. Allison, Johnstone, and Royce (1943) describe a similar case in which dysphagia began during pregnancy and a short oesophagus was found to be present, but they make no comment on the association.

Pathology

Since the earlier reports, summarized by Findlay and Brown Kelly (1931), there has been singularly little addition to the pathological knowledge. Morison (1930) described a further clear-cut case.

In this series, two patients died (one of haemorrhage from a duodenal ulcer and the other of cancer of the colon) and post-mortem examinations were made. The description of the findings in Case 4 has already been given.

Case 13.—A woman aged 62 was admitted to hospital because of bleeding from the rectum due to carcinoma of the pelvic colon. She gave a 40-year history of regurgitation of solid food which stuck at the lower end of the sternum. No other information was available from records. *X*-ray examination showed a short oesophagus, a large thoracic stomach, and a partial oesophageal stricture, but no ulcer was seen. This patient subsequently died, and at necropsy the oesophagus was not short, since the measurement from the top of the thyroid cartilage to the cardia was 30 cm. The hiatus, however, measured 2 in. (5 cm.) in diameter, the oesophagus being placed centrally and attached loosely to it by a fibrous diaphragm.

Unfortunately in Case 4 no special search was made and the oesophageal hiatus was not measured, but there was at least no pronounced shortening of the oesophagus and no part of the stomach was found in the thorax. The findings in Case 13 were also unexpected in that here again none of the stomach was in the thorax and there was no shortening of the oesophagus—this in spite of the unequivocal radiological evidence to the contrary (Harrington, 1940). One is therefore forced to the conclusion that even after years of dysphagia and regurgitation the hiatal hernia may remain unfixed or sliding, while the shortening of the oesophagus must be attributed to spasm. It should be noted, however, that in neither of these cases was there a fibrous stricture.

In an exhaustive discussion Smithers (1945) reached the conclusion that the initial lesion is a congenital or acquired weakness of the oesophageal hiatal ring with herniation of the cardiac end of the stomach followed by passage of gastric juice into the oesophagus. Contraction of the longitudinal muscle fibres is thereby provoked with production of "shortening" of the oesophagus. Support for this view is drawn from the work of Gilbert, Dey, and Rall (1946), who stimulated the vagi of cats electrically and observed contraction of the oesophagus, with drawing upwards of the cardia through the oesophageal orifice. We have ourselves noted in two very recent patients (not included in this series) at one time radiological appearances typical of large para-oesophageal hernia and a few weeks later those of hiatal hernia with short oesophagus. This would make it very difficult to accept the hypothesis of congenital shortening of the oesophagus.

On the other hand the post-mortem observations of the earlier workers and recent work of Allison (1948), who excised the fibrous oesophageal strictures, show that in some patients, presumably after ulceration, the oesophagus becomes permanently shortened by cicatricial contraction.

Prognosis and Treatment

The majority of patients in this series were able to lead a reasonably comfortable and normal life in spite of persistence of oesophageal symptoms, provided they exercised care in the choice of diet and masticated their food thoroughly. From time to time a number required the passage of bougies. The upright position in bed to minimize the reflux of acid, and the use of alkaline powders, were often helpful. One patient seemed to have made a complete recovery, but refused to have a re-examination with barium. One patient was found to have adenocarcinoma of the thoracic stomach and died in another hospital. The other two deaths in this series were due to a coexistent duodenal ulcer (haemorrhage) and to carcinoma of the colon respectively.

It is of interest that we were able, after an interval of 17 years, to re-examine two of the patients originally reported on by Findlay and Brown Kelly in the Royal Hospital for Sick Children, Glasgow, when one of us was house-physician to Professor Findlay. One was a woman now aged 25, small and slightly built, who was in good health and had served in the A.T.S. She confessed that at times she had dysphagia and regurgitation, but apparently had had no difficulty in concealing this from the Army authorities. Barium examination revealed a short oesophagus, a thoracic stomach, and a partial stricture. The other patient was a sturdy youth of 18 who occasionally felt food stick at the lower end of the sternum. *X*-ray examination gave a similar picture.

Summary

Over a period of 10 years dysphagia in 26 patients was found to be due to simple ulcer or stricture of the lower end of the gullet, accompanied by *x*-ray appearances of gastric hiatal hernia and shortening of the oesophagus. Over the same period cancer in the lower third and achalasia caused dysphagia in 80 and 31 instances respectively.

The diagnosis was not often considered, and proof was obtained only by radiology, using a special technique with, on occasion, oesophagoscopy and biopsy.

Dysphagia and ulcer pain developed during the later months of pregnancy in five patients and immediately following abdominal operation in three.

In five patients there were no oesophageal symptoms—three were admitted because of massive haematemesis, one because of anaemia, and the fifth gave a long history of pain and flatulence for which her gall-bladder had been removed without relief.

Congenital or "acquired" weakness of the oesophageal ring is common, allowing of a small sliding hiatal hernia without symptoms. It is considered that only in a minority of people does oesophageal ulcer develop. A rise of intra-abdominal pressure in pregnancy would seem to be one factor concerned. Oesophageal ulcer was not encountered in the absence of hiatal hernia and short oesophagus.

We would like to thank many colleagues in the Western Infirmary who have allowed us access to their patients and to their case records.

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TRILENE ANALGESIA IN PAEDIATRIC PRACTICE

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Various minor diagnostic procedures in paediatrics, such as venepuncture, lumbar puncture, marrow puncture, testing electrical reactions of muscles, abdominal palpation, and chest exploration, cause apprehension and discomfort, often sufficient to render a child uncooperative or even actively resistant. Many other painful and uncomfortable undertakings occur in the course of treatment, such as intravenous injections and burn and wound dressings.

It is possible to diminish apprehension with such sedatives as chloral hydrate or "seconal" and still leave the patient co-operative; but often at the first appreciation of pain the child becomes resistant. The use of anaesthesia or local analgesia would seem to be justified where there is likely to be more than trivial discomfort or where it is essential that the patient should remain still and not resist. General anaesthesia eventually eliminates the patient's resistance but deprives us of his co-operation, and is not without a certain minimal risk. Local analgesia, with its attendant first stab of pain, often renders the child apprehensive, so that he becomes restless and uncooperative.

It occurred to one of us (J. T.) that analgesia produced by a simple inhaler might overcome the disadvantages of sedatives and of anaesthesia. In this communication the apparatus, indications for its use, the technique of administration, and the results obtained in a series of 60 consecutive administrations are described.

Apparatus

The apparatus used was the Blease inhaler. This is a simple draw-over type of inhaler, which can give three concentrations of "trilene" (trichlorethylene) suitable for analgesia and an additional one for anaesthesia by adjusting a simple screw setting. On occasions when induction was slow it was necessary to increase the concentration to "anaesthesia." The only modification required in the standard equipment was the provision of a small face-mask. We used the smallest obtainable (B.O.C. type, small size). At times an even smaller size would have been an advantage.

Indications.—We define analgesia as the loss of sensation of pain without loss of consciousness. The apparatus was used when a diagnostic or therapeutic measure was likely to cause pain, discomfort, or undue apprehension, and where formerly we would have employed sedatives or local or general anaesthesia. When analgesia is desirable, trilene would seem to have no special contraindication.

Our series of 60 cases represents a cross-section of patients admitted to a children's medical ward for investigation and treatment. Analgesia was given for lumbar puncture (34 cases), cisternal puncture (3 cases), venepuncture (7 cases), chest aspiration (8 cases), marrow puncture (3 cases), burn and wound dressings (3 cases); and in one case each for abdominal palpation and electrical reactions.

Age.—The ages ranged from 8 months to 11 years. In infants under 9 months old inhalational analgesia has little to recommend it. We found its greatest use in children over 1 year old. In those in the group aged 1 to 5 years it prevents resistance; and in those over 5 years it will also often secure actual co-operation.

State of Health.—The state of health varied from the acutely ill newly admitted child to the chronically ill case from the waiting-list for investigation or the comparatively healthy convalescent.

Procedure to be Undertaken.—The predominant symptom, or the suspected lesion, along with the diagnostic procedure undertaken in the various cases, is shown in the Table. In the course of treatment, intravenous injections, toilet of burns, suture of lacerations, and burn and wound re-dressings were all carried out under analgesia.

Administration

No premedication was given, and analgesia was induced without special regard to the interval since the last meal. One patient received trilene as early as five minutes after a meal without untoward effect. Several have been given trilene soon after meals, because of urgency in getting samples for laboratory examination. It is not suggested that a recent meal should be ignored, but when circumstances warrant haste trilene analgesia can justifiably be employed soon after a meal. The child, if old enough to understand, is told the purpose of the inhaler and asked to take extra deep breaths if he should feel anything hurt. The mask is applied and a conversation is kept up with the child to allay fear and encourage regular breathing. The older children, aged 5 to 11, were more or less co-operative during the administration and responded to the instruction to take regular deep breaths, usually becoming analgesic in two or three minutes. The younger children struggled and cried in some instances, but after a few deep breaths, associated with the effort of crying, they quieted down, became analgesic, and were usually drowsy. Coughing and spluttering were unusual. When we had become more conversant with the signs of analgesia (see below), if induction seemed a little slow the control screw was turned to "anaesthesia" and returned to "maximum analgesia" when analgesia was obtained. No increase in concentration of trilene was required for older children. Indeed, the younger ones were usually more resistant; but

this may have been due to the difficulty in getting a snugly fitting mask which would allow an effective concentration of trilene to be inhaled.

Once satisfactory analgesia was obtained, the finger was removed from the air port over the facepiece, thus permitting the patient to breathe air. The port was again occluded if analgesia diminished.

The signs indicating effective analgesia were not defined clearly enough to allow any hard-and-fast rules to be laid down, but the following observations were made when analgesia was effective: the breathing was regular, the eyelids were closed, and there was diminishing response to the eyelid reflexes. The patient was drowsy, but, if old enough, readily, almost automatically, responded to requests such as, "Turn on your side" or "Put your arm out."

When ether was used in skin preparation the absence of resentment to its coldness was a good indication that analgesia was satisfactory.

If the administration was continued with the control screw at "maximum analgesia" some cases showed a little increased motor activity, suggesting that the second stage of anaesthesia had been reached. Administration was stopped at this point and the stage of analgesia and drowsiness returned. Where the operation was to be of short duration, administration was continued until the painful stimulus—for example, the prick of the needle—was effected; then the facepiece was removed and the residual analgesia usually afforded enough time for the completion of the procedure. In one case not in this age group an intelligent 12-year-old boy successfully administered trilene to himself to the stage of analgesia, during which lumbar puncture and cerebrospinal fluid manometry were carried out.

In five cases tachypnoea developed, and the administration was stopped. However, subsequent events showed that the onset of tachypnoea corresponded with a satisfactory degree of analgesia.

Observations

We all gained the impression that trilene facilitated the performance of these minor procedures for both patient and operator. This conclusion, so far as it concerns the patient, was based upon objective findings in the younger children, and in the older children upon both objective and subjective findings.

Before questioning the older children a day was usually allowed to elapse, because when still analgesic the child was obviously very amenable to suggestion. Although no set series of questions was asked, it was clear that memory for the procedure was hazy and the child would state that no pain was felt.

Lack of Pain.—No attempt was made to estimate the degree of analgesia quantitatively. However, the following observations led us to conclude that in every case pain was either abolished or greatly diminished. (1) There was never any cry caused by pain or any noticeable vocal or motor response due to the painful stimulus. (2) When subsequent similar procedures were indicated the children showed less apprehension. (3) The painful stimulus evoked little or no resistance—e.g., there was much less extending of the spine when the needle entered the skin for lumbar puncture, and the child was much more easily held in position.

Co-operation or Lack of Resistance.—Active co-operation or at least lack of resistance was apparent when some unusual position had to be maintained. At lumbar puncture the patient lay still and relaxed, allowing full flexion of the spine. In one girl, aged 8, we twice easily performed lumbar puncture under trilene analgesia and later transferred her to another hospital, where a lumbar

Table Showing Prominent Symptoms, Suspected Lesions, and Diagnostic Procedures Undertaken

Provisional Diagnosis or Predominant Symptom	No. of Cases	Age: Under 5 Years	Age: 5–11 Years	Procedure Required	Co-operation in Induction of Analgesia: Non-Cooperative	Co-operation in Induction of Analgesia: Passive	Co-operation in Induction of Analgesia: Active Co-operation	Degree of Analgesia Obtained: No Analgesia	Degree of Analgesia Obtained: Pure Analgesia	Degree of Analgesia Obtained: Analgesia and Drowsiness	Degree of Analgesia Obtained: Second Stage Anaesthesia	Effect: No Effect; Resistant	Effect: Not Resisting; Passive or Drowsy	Effect: Actually Co-operative	After-effects: Nil	After-effects: Drowsy	After-effects: Vomiting	Relation to Meals (Hrs. after): Less Than 1	Relation to Meals (Hrs. after): 1–2	Relation to Meals (Hrs. after): More Than 2	Tachypnoea
Meningitis, meningismus	14	12	2	Lumbar puncture	3	9	2	1	—	11	2	1	2	1	1	13	—	—	7	7	2
Intracranial space-occupying lesion, severe persisting headaches	8	—	8	Lumbar puncture with spinal manometry	—	1	7	—	1	6	1	—	3	5	5	3	—	2	5	1	—
Epileptiform convulsions	8	5	3	Lumbar puncture	1	2	5	—	—	6	2	—	6	2	3	5	—	—	4	4	—
Paralysis of limbs, facial palsy	4	3	1	Lumbar puncture (2) / Cisternal puncture (1) / Cisternal puncture (2)	2	1	1	—	—	4	—	—	3	1	—	4	1	1	1	2	—
Hydrocephalus, spina bifida	3	2	1	Lumbar puncture (1)	1	1	1	—	1	2	—	—	2	1	—	3	—	1	1	1	—
Rheumatic fever	2	—	2	Venepuncture, blood salicylate levels	—	1	1	—	1	1	—	—	1	1	1	1	—	—	—	2	—
Primary blood disorder, leukaemia, purpura	2	1	1	Venepuncture, blood picture, and biochemical estimations	—	1	1	—	—	1	1	—	1	1	—	2	—	—	2	—	—
Congenital syphilis	2	—	2	Venepuncture, W.R.	—	1	1	—	—	2	—	—	1	1	—	2	—	—	2	—	—
Coeliac disease	1	—	1	Venepuncture, therapeutic "ferrivenin"	1	—	—	—	—	1	—	—	1	—	—	1	—	—	—	1	—
Pleural effusion, serous and purulent types	8	1	7	Diagnostic chest aspiration	1	3	4	—	1	4	3	—	5	3	4	4	—	—	4	4	—
Aplastic anaemia, leukaemia	3	3	—	Marrow puncture	—	3	—	—	1	2	—	—	3	—	2	1	—	—	—	3	2
Intussusception	1	1	—	Abdominal palpation	—	—	1	—	—	1	—	—	1	—	—	1	—	—	—	1	—
Polyneuritis	1	1	—	Electrical reactions of muscles	—	1	—	—	1	—	—	—	1	—	1	—	—	—	—	1	—
Burns and wounds	3	3	—	Toilet and dressings	—	1	2	—	—	2	1	—	3	—	—	3	—	—	1	2	1
Total	60	32	28		9	25	26	1	6	43	10	1	43	16	17	43	1	4	27	29	5
%		53	47		15	42	43	2	10	72	16	2	72	26	28	72	2	7	45	48	8

Satisfactory analgesia 98%

Inhaler of value in 98%

puncture, attempted without analgesia, had to be abandoned because of resistance. In another case, a child who had shown violent opposition submitted readily to a difficult intravenous injection after a few breaths into the trilene inhaler. In a case in which electrical reactions were investigated in a child of 3, we first attempted it without analgesia, but at the first stimulus she became restless. Satisfactory assessment of her reactions could be made only after analgesia had been induced.

Relation to State of Health.—The acutely ill children were more easily made analgesic, but otherwise showed no different response and suffered no more after-effects from the trilene than the chronically ill or convalescent. Where development of empyema was suspected, chest aspiration was effected easily and comfortably under trilene, and the patient suffered no ill effects from it. Trilene in low concentration is practically non-irritant to the respiratory passages. This suggests that the presence of acute or subacute inflammatory lesions of the chest may be no contraindication to trilene analgesia. No cases of primary liver disease occurred in our series, but as trilene has only a transient slight hepatotoxic effect (Armstrong, 1947) it would seem quite justifiable to use it for the short period required unless very extensive liver damage was suspected.

After-effects.—In this series no untoward effects resulted from the administration of trilene analgesia, apart from vomiting. This occurred in only one patient, who had had a large meal half an hour before trilene was administered. The child was not seriously ill or toxic, and no explanation was forthcoming why she had vomited. Vomiting did not occur in any other case in the series. All the children were able to take their next meal at the usual time and did not require additional nursing. Post-analgesic drowsiness was not infrequent (72% of total cases). It lasted from a quarter of an hour to two hours. The child awoke as from natural sleep. It was regarded as one of the advantages that a child should have this short sleep after an unusual experience, as he awoke with apparent amnesia for it.

Failure of Analgesia.—This was observed in one case, that of an infant aged 14 months. The child cried and struggled throughout. This was thought to be due to a poorly fitting face-mask.

Advantages and Disadvantages

Advantages.—(1) The apparatus is simple, safe to use, and inexpensive to maintain. (2) Administration of the analgesia presents no difficulty and takes no longer than local analgesia. (3) Trilene analgesia causes the patient no discomfort. Apprehension is greatly diminished and pain is abolished or greatly reduced. (4) Trilene analgesia affords enough scope for the performance of most of the painful diagnostic and therapeutic procedures in paediatrics. It avoids having to make the choice between full anaesthesia with its risk and possible upset, and no anaesthesia with its safety but greater discomfort. (5) Trauma, physical and psychological, is minimized. (6) The diagnostic and therapeutic procedure can be carried out more quickly, adequately, and deftly, and asepsis is more readily maintained. (7) Satisfactory analgesia allows more comprehensive investigation to be undertaken. (8) The post-analgesic effects include a beneficial period of drowsiness associated with apparent amnesia for the procedure. Nausea is infrequent and meals can be resumed in nearly every case when the patient awakes.

Disadvantages.—(1) The point at which analgesia becomes effective is not easy to appreciate. (2) There is no uniformity in the response to a given concentration of trilene, and the same vigilance must be observed as when administering any anaesthetic. (3) Tachypnoea may occur.

Conclusions

Analgesia which is safe, easily induced and controlled, and devoid of untoward after-effects would appear to be desirable in many of the painful or frightening diagnostic and minor therapeutic procedures in medical paediatric practice.

Local analgesia produced by procaine or similar substances is safe, but causes initial pain and thereafter apprehension and resistance.

Drugs such as chloral hydrate and the barbiturates have not sufficient analgesic effects. Trilene is one of the safest analgesic agents (Ostlere, 1948). It is well taken and well tolerated by children. When administered from an inhaler of the Blease type it produces satisfactory analgesia (98% in this series). It allowed a variety of procedures to be carried out without pain or resistance, or the inconvenience and risk of general anaesthesia.

Psychological upsets are greatly diminished, thus allowing frequent investigations of a disturbing nature to be carried out.

Apart from occasional post-analgesic vomiting (2%) trilene produced no undesirable after-effects. Trilene given with an inhaler of the Blease type secures analgesia more effectively and with a greater margin of safety than any other method with which we are familiar.

Summary

The need for analgesia of short duration in medical paediatrics is discussed.

Trilene analgesia in 60 consecutive cases is analysed. Satisfactory analgesia was obtained in 98%. Beneficial drowsiness occurred in 72%. Tachypnoea occurred in 8%, but analgesia was already present. Psychological benefits are noted.

It is claimed that trilene from a Blease-type inhaler produces satisfactory analgesia for use in medical paediatric practice.

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The report of the River Pollution Prevention Subcommittee of the Central Advisory Water Committee was published recently by the Ministry of Health. The subcommittee was asked to investigate measures for strengthening the law regarding the prevention of pollution of rivers and streams. Its recommendations mark a further stage in the steps proposed for safeguarding and improving the conditions of rivers in England and Wales. The new River Boards, which are now being set up under the River Boards Act, 1948, will provide a new administrative organization based on natural catchment areas instead of local government areas. The next stage is to equip these boards with up-to-date and effective legal powers. The subcommittee considers that the Rivers Pollution Prevention Act, 1876, which is the principal Act now in force, needs considerable revision and strengthening. One of its main recommendations is that effluents discharging into a river or stream should be required to comply with standards prescribed by the River Boards. The standards would be prescribed by by-laws, subject to confirmation by the Minister of Health under a procedure which would give those affected an opportunity to raise objections and to be heard in support of them. Under the Act of 1876 legal proceedings in respect of pollution by trade and mining wastes may be taken only with the consent of the Minister of Health. The subcommittee recommends that once standards have been prescribed consent should not be necessary in the case of failure to comply with a standard, since the effect of the standard on industrial interests will have been considered when the standard was applied.

LEUCOTOMY AND HYPERTENSION

A CASE REPORT

BY

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(From the Psychiatric Department, St. George's Hospital, S.W.1)

The following case raises points of theoretical and practical interest, with special reference to the psychosomatic relationships of hypertension.

Case Report

A housewife, then aged 54, was first seen in the psychiatric out-patient department of St. George's Hospital by Dr. Desmond Curran in September, 1947. The presenting symptoms were suicidal depression, intense headaches, and deterioration of vision of three years' duration. A few weeks later she was admitted under Dr. Curran's care into the St. George's Psychiatric Unit at the Atkinson Morley Hospital, Wimbledon.

She is said to have been a woman of active but even temperament. Her personal history, free as it was from abnormal stress, instability, or disharmony, contributes little to an understanding of the case. Marital relations have been good and her three children enjoy good health. Pregnancies and puerperia were uncomplicated. The family history is significant only in so far as the father was asthmatic and one of eleven siblings committed suicide at the age of 21, in the face of considerable stress.

Onset

Her physical and mental health was good until 1944, when her spontaneity and outside interests began to decrease. Intense stabbing supraorbital headaches were increasingly frequent and her menses became irregular. Her visual acuity was decreasing and there were multiple inconsistent symptoms of a hysterical kind. Depression, accompanied by headache and worse in the morning, became so severe that suicidal preoccupation was almost constant. Her threats completely disorganized home life, and on four occasions she made material suicidal preparations or attempts. Even making allowance for histrionic features, the underlying risk was considerable.

In 1946 she was admitted to Dorking Cottage Hospital under Dr. Brice-Smith, who, with the aid of intravenous and retrograde pyelograms and blood-urea estimations, was able to exclude a renal basis for the hypertension. At this stage she was referred to Dr. Strauss at the department of psychological medicine, St. Bartholomew's Hospital. On the organic side arteriosclerosis, hypertension, and a small retinal haemorrhage were noted, while phobias and other neurotic symptoms were prominent. Some of these were alleviated by a narcoanalysis performed by Dr. Jonathan Gould, but the depression persisted. The intractability and severity of the depression were such that certain risks were justified, and it was agreed that electric convulsion therapy should be given a trial. Seventeen treatments were given in two courses over a long period, but the slight improvements were never sustained. Due consideration being given to the operative risk with an arteriosclerotic subject, Dr. Strauss and Dr. Gould concurred that the indications were in favour of prefrontal leucotomy.

At the Atkinson Morley Hospital her blood pressure was observed closely for three weeks. At its most favourable it was of the order 170/100. It was usually considerably higher and there were frequent hypertensive attacks associated with intense headache, with the blood pressure as high as 260/160. Dr. Gerald Parsons-Smith reported: "This patient has severe arteriosclerosis with hypertensive heart disease. The hypertension is at present in a labile stage and has not become fixed at the high figures of 260/160, which will eventually become the position. Examination of the fundi confirms the severe arterial changes. . . ." Clinically there was slight cardiac enlargement and an accentuated aortic second sound. There was no papilloedema, but the retinal haemorrhage was still visible. The blood urea was 28 mg. per 100 ml. All other relevant special investigations yielded insignificant results.

From the mental standpoint she was profoundly tense and depressed and moderately retarded. She made one suicidal gesture in the ward and was constantly on full precautions. Sleep and appetite were poor. There was little self-reproach, and she was not deluded. Her recent memory, as might have been expected, was patchy, but on the whole there was nothing to indicate organic cerebral deterioration.

Treatments which had proved unavailing at various hospitals included pethidine, nicotinic acid, oestrin preparations, venesection, strong sedation, psychotherapy, and E.C.T. Sympathectomy had been considered to be contraindicated. Dr. Curran agreed that leucotomy should be recommended, and the risks were explained to her husband. Mr. Wylie McKissock generously undertook to perform the operation, and bilateral prefrontal leucotomy was performed on October 29, 1947, the approach being that described elsewhere (McKissock, 1943). Very severe arterial haemorrhage occurred on the left side, but eventually the flow was controlled with a tantalum clip.

Post-operative History

The patient's general condition in the immediate post-operative phase, while never critical, gave rise to concern for about two days. Her pulse remained regular and the blood pressure, after the initial shock, fluctuated slightly around 140/80. She was incontinent for about a week, and from the mental standpoint she was free from tension and depression, but was confused and disorientated. After three weeks she was out of bed, but still apt to be confused and to confabulate. She was cheerful, greedy, fatuous, and anergic, and was inclined, even more than most post-leucotomy patients, to huddle round the fire and radiators. On one occasion a syncopal (not epileptiform) attack occurred, and in this her blood pressure fell to 80/40. A haemoglobin level of 70%, which responded to iron treatment, may have been contributory. Two months after the operation her behaviour was greatly improved and she was noted as being cheerful, sociable, and helpful in the ward. Her witticisms were not always fully apt and, with a set occupational task, she proved incapable of long-sustained attention. She was eating and sleeping well and gaining weight.

The next six weeks were spent at Roffey Park Rehabilitation Centre, where, in such a favourable environment, she continued to improve, especially from the occupational standpoint. Frequently recorded blood-pressure readings were always between 160/90 and 140/80. On one occasion an epileptiform attack occurred and subsequently she received a 1-gr. (65-mg.) tablet of phenobarbitone twice a day.

Since that time the patient and her husband have been seen about every two months, the last attendance being 16 months after the operation. The following are summaries of the findings.

1. There have been no headaches worthy of note.

2. The prevailing mood is cheerful and she has been virtually free from tension or depression. The personality changes, as betrayed by occasional outspoken remarks or carefree domestic attitudes and slight limitation of foresight, are scarcely evident as such to the family. She works harder than many and the home is well run. This contrasts with her almost total social and domestic incapacity during her illness.

3. She has had three attacks of (almost certainly) minor epilepsy related to inconsistent taking of phenobarbitone. The last attack was in April, 1948.

4. Precipitancy and occasional enuresis have occurred, but there has been no enuresis in the last two months.

5. She has continued to gain weight—from about 8 st. to 12 st. (50.8 to 76.2 kg.)—since the operation. Her friends and family claim to like her "comfortable figure," but she is definitely obese.

6. The menstrual periods have ceased entirely since the operation.

7. The most striking change is that the blood pressure has always been within the range 160/100 to 140/95. There has been no tendency for it to rise month by month.

8. She was re-examined by Dr. Parsons-Smith 15 months after the operation. He states: "There has been quite a remarkable change in this patient's general medical condition since I saw her in 1947. Recently she has had no symptoms referable to her cardiovascular state, which is all the more striking since she has gained 4 st. (25.4 kg.) in weight. She still has well-marked arteriosclerotic changes, but the fundus is free from exudates and haemorrhage and there is no papilloedema. . . ." The apex beat was in the fifth space in the same position as before, 4½ in. (11.4 cm.) from the mid-sternal line, but there were no other abnormal physical signs.

9. *Special Investigations (January, 1949, 15 months after operation).* — *Electrocardiography:* — Unfortunately no pre-operative record was available for comparison. Taking this into account, the record at this time was not significantly abnormal. *Electroencephalography:*—"The E.E.G. recorded on this date was very abnormal. The tips of both frontal lobes showed flat records, but elsewhere irregular slow waves were seen in all leads. These were occasionally organized into short rhythms characteristic of epileptic discharges." The *blood urea* was 25 mg. per 100 ml. A radiograph of the chest confirmed slight *cardiac enlargement*, but there was no change from the pre-operative picture.

10. Mrs. Petrie, reassessing the patient eight months after the operation, reported the I.Q. as 109 (Wechsler–Bellevue scale). The gain of 10 points over the pre-operative level was largely a measure of increased co-operation.

11. The tendency to improve since the leucotomy still seems to be operative.

Discussion

There can be little doubt that without the operation the patient was faced with a future of almost constant suffering until death occurred from suicide or cardiovascular complications. The price which has been paid in personality change is familiar in quality but small in degree; progressive hypertensive changes would probably have affected the personality more adversely.

The final cessation of the menstrual periods and the obesity (greater than one might have a right to expect in terms of energy output and food intake) point to endocrine or metabolic changes, about the exact nature of which we can only speculate. The craving for heat, which we have observed more than once after leucotomy, is interesting. It has seemed to us to have a more fundamental basis than mere anergia or hedonism, and, clinically, hypothyroidism has not been indicated. The fact that in monkeys increased heat loss has been shown to follow experimental ablation of area 13 is worth noting (Livingston, Fulton, *et al.*, 1948). It is thought that this may possibly be due to reduction in the amount of peripheral sympathetic activity; in this context it is interesting to note that, in spite of full precautions, our patient developed a bedsore on one buttock after the operation. This has occurred in no other leucotomy patient in our experience.

The main interest in this case, however, attaches to the fall and the greatly increased stability of the blood pressure. Abrupt changes in blood pressure are commonly observed during the operation, and Freeman and Watts (1942) write: "On a number of occasions we have observed a precipitate drop in the blood pressure following incision of the subcortical white matter on one side and then an almost equally abrupt elevation, sometimes amounting to as much as 60 or 80 points, as the other side was operated upon."

In the majority of patients there is little permanent difference between the blood-pressure readings after operation and those recorded during the illness. Where, however, a high degree of nervous tension, in association with a raised blood pressure, existed before the operation, and where this tension is relaxed afterwards, there is a general tendency for the post-operative readings to remain at significantly lower levels. The tendency for the blood pressure to fail to reach the previous high peaks after leucotomy is best seen in frankly hypertensive patients; Freeman and Watts (1942) have described two such cases. Both of these women were suffering from agitated depression, and the relevant facts were:

	B.P. Before Leucotomy	B.P. After Leucotomy
Case A (aged 59)	184/110–222/128	190/105–195/110 (3-year follow-up)
Case B (aged 66)	Around 220/110	130/70–155/80 in hospital, and round 195/75 with full activity

The findings in both these cases are comparable with but less pronounced than those in the case reported above.

Three theoretical possibilities suggest themselves as explanations for the sustained reduction and the increased stability of blood pressure:

(*a*) Decreased physical activity after operation. This is not borne out by our patient, whose pre-operative readings were taken in bed.

(*b*) That the changes are due to interference with localized anatomical areas particularly concerned with automatic function. Evidence, largely inspired by the work of Fulton in America, points particularly to area 13, and to a less extent to area 14 (Stanley and Jaynes, 1949) on the orbital surface of the frontal lobe; the rostral part of the cingulate gyrus (area 24) is also suspect. While these areas are usually avoided in the performance of prefrontal leucotomy they have at times been involved.

Smith (1945), in stimulating the rostral part of the cingulate gyrus in monkeys, produced, among other changes, a significant rise in blood pressure without alteration in the cardiac rate. Ward (1948) described personality changes in the monkey after ablation of this area, and these changes are in some ways comparable to those which may be seen in man after leucotomy. Attention, however, has centred mainly on the orbital surface of the frontal lobe.

Changes in blood pressure (usually a rise), together with inhibition of respiration and decrease in gastric tonus, have been produced in animals by stimulating an area near the olfactory tract (Bailey and Sweet, 1940; Delgado and Livingston, 1948). In the monkey the blood-pressure responses are still operative if the vagi are cut and adrenals removed (Livingston, Fulton, *et al.*, 1948). More recently experiments have been carried out (Livingston, Chapman, and Livingston, 1948) in which, under moderate thiopentone anaesthesia, the orbital surfaces of leucotomy patients were stimulated before the operation. A gradual but consistent and significant rise in blood pressure followed stimulation, and it was shown that this was not causally related to the inhibition of respiration, which also occurred.

It is worth noting that in our patient none of the hyperactivity described in monkeys in relation to lesions of area 13 was seen (Livingston, Fulton, *et al.*, 1948; Ruch and Shenkin, 1943); hyperphagia, however, was certainly evident at first. The whole issue is of course obscured by our inexact knowledge of the extent of the lesion; in view of the haemorrhage this may have been considerable.

(*c*) The third approach assumes a close relationship between the mental tension and the raised blood pressure, so that a decrease in the one is accompanied *pari passu* by a fall in the other. This seems probable on general grounds and in view of the fall in blood pressure sometimes seen after patients who are both hypertensive and depressed have received electric convulsion treatment. In our present state of knowledge we are at a loss to know whether to think in terms of pressor substances or thalamo-frontal radiations, or a combination of the two.

In the selection of the small group of similar cases which might be helped by leucotomy the following criteria are suggested tentatively: (1) The mental state should be such as to call for leucotomy irrespective of the hypertension, and the mental tension should be pathologically high. (2) Every reasonable form of alternative treatment should have been tried without sustained response. (3) The outlook without leucotomy should be bad enough to make all concerned prepared to face a considerable operative risk. (4) Intellectual deterioration should be negligible. (5) The hypertension should be labile, as determined, if necessary, by the intravenous injection of sodium amytal. The arteries should preferably be in a healthier state than in the above case and there should never have been any indication of heart failure. (6) The renal function should be completely satisfactory.

Summary

A case is reported of prefrontal leucotomy performed on a hypertensive patient suffering from severe and intractable depression, the onset of which was associated with the climacteric.

Blood-pressure readings previously ranging between 170/100 and 260/160 have over the 16 months since the operation remained stabilized between 140/95 and 160/100. A retinal haemorrhage seen before the operation is no longer evident.

Possible explanations for these findings and for others which may be related to autonomic functions are discussed.

The disappearance of symptoms and the very great improvement in the domestic situation are considered to outweigh the personality changes and other complications.

Suggestions are made concerning the indications for performing prefrontal leucotomy where hypertension is one of the factors.

I am indebted to all those mentioned in the text for their help, and more particularly to Dr. Desmond Curran for criticism and encouragement and to Dr. Hazel Liddell for the use of her original notes on the case.

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Speaking at a conference on home helps recently, Dr. Peters, Deputy Chief Medical Officer, Department of Health for Scotland, said that though the hospital and specialist services might be the most costly and the most spectacular part of the National Health Service a great deal of its work would be stultified if it could not be followed by continued care in the home. Socio-medical services were of the utmost value in helping to keep the family together and preventing it from being broken up, as it so often could be, by the sickness or disability of one of the parents or bread-winners. The home help should be looked on as a member of a team, along with the family doctor, the health visitor and the district nurse, which could do a great deal towards alleviating suffering and anxiety. She was not a nurse, although occasionally her duties might have to extend to some personal attention, but she was a trained member of a team of social workers whose job it was to help and strengthen the home. Some authorities were already reporting remarkable success in their efforts to supply home helps. The home-help arrangements could be one of the most important and most rewarding parts of the whole National Health Service.

Medical Memorandum

A Shot-filled Appendix

Many cases of appendicitis have been found to contain lead shot inside the lumen of the appendix; usually two, three, or four pieces are discovered. The following case is unusual because of the large number of shot found.

CASE REPORT

The patient, an unmarried woman aged 52, had a three-months history of vague abdominal symptoms which were becoming progressively worse. These symptoms consisted of pain in the epigastrium and in the right lower quadrant of the abdomen, flatulence, attacks of nausea, and, very occasionally, vomiting. The pain was in no way related to meals. There was no loss of weight and there had been no previous similar history. Associated with the abdominal symptoms was a history of occipital headaches and pains in the neck and shoulders for about the same length of time.

Radiological appearance

Appendix after removal

Clinical examination revealed a well-built patient with a marked absence of signs except for tenderness in the epigastrium and right iliac fossa, in neither of which was it very severe. In view of her age and the vagueness of the symptoms and signs a cholecystographic and barium meal examination was made.

The radiological report (Dr. S. Cochrane Shanks) stated: "The cholecystogram was normal, the stomach and duodenum showed a coarse mucosal pattern consistent with a gastro-duodenitis, but there was no sign of actual ulceration. The appendix was very long, and was filled in its distal half with what appeared to be lead shot. There was tenderness over the appendicular shadow. Doubtless the length of the appendix had something to do with the stasis in the distal half."

The case was referred to a consulting surgeon, Mr. Michael J. Smyth, F.R.C.S., who performed a laparotomy, with a para-median incision extending from the umbilicus downwards. No abnormality was found except that the appendix was distended and bulbous, and was removed. The patient made a rapid and uneventful recovery, all her symptoms, including the head and neck pains, having disappeared.

A pathological examination of the appendix was made by Dr. E. Cuthbert Dukes, who reported as follows: "The appendix was enlarged and its wall was thickened. Its interior was packed with more than 60 small lead shots. No other abnormality was seen. Microscopical examination showed only a slight increase in fibrous tissue in the submucosa. In all other respects the histology was normal." (See photograph.)

It was later discovered that the patient often ate game, her brother being a first-class shot.

C. EPPEL, M.B., B.Ch.

Reviews

SIGHT AND SNAKES

Visual Development. By J. H. Prince, F.R.M.S., F.B.O.A. Volume I. Foreword by Professor H. Hartridge, F.R.S. (Pp. 418; 182 illustrations. £2 10s.) Edinburgh: E. and S. Livingstone. 1949.

Sight, Light and Efficiency. By H. C. Weston, F.I.E.S. (Pp. 318; 132 illustrations. £2 2s.) London: H. K. Lewis and Co. 1949.

Mr. J. H. Prince has travelled fifty thousand miles around and about the Antipodes collecting and examining animals of all types and descriptions, observing them in their natural habitats, watching what they do and do not do, looking into their eyes during life and sectioning them after death, seeking out naturalists, scientists, and just ordinary plain folk—anyone, in fact, who had information to impart. He has examined, watched, and listened to some purpose, and, what is still more important, his observations and deductions make fascinating reading.

With a verve which I hope will take him another fifty thousand miles he tells us in a few pages all there is to know about the development of vision and colour vision, visual imagery, and visual perceptions—the whole story of the evolution of the visual sense from its inception in light-sensitive cells to its fullest development in birds and the higher mammals. He tells how 3,000,000,000 years ago organic solutions reacted to light, 1,000,000,000 years ago unicellular organisms did likewise, 1,200,000,000 years ago amoebae developed primitive eye-spots, 550,000,000 years ago light recognition appeared, and 150,000,000 years ago cephalopods ultimately developed useful eyes; how dark-adaptation followed a flight for safety from predatory enemies to the abyss of the ocean, how the perception of the third dimension arose from the need to pierce the camouflage adopted by animals of shading into their environment, and the colour sense from the development of camouflage by colour. All kinds of knowledge is gained by the way, from how best to use a microscope and take photographs, through a mine of information (most of which I did not know before) on the shape of the pupil in hundreds of species and the appearance of the fundus—illustrated by beautiful paintings—of almost as many, to a discussion of the best way to restrain a snake or a lion when you examine its eyes.

There is plenty of excitement, too—for instance, an illustration of the danger of getting anaesthetized first if you give an anaesthetic to a buffalo to examine its fundus. The greatest thrill is the tiger-snake. Prince guillotined it so that he could look at its fundus without anxiety, but when he approached the severed head the jaws opened—apparently it still could see. The headless body disappeared out of the room, moving along with its severed neck raised until it was swallowed by another snake, and even then the headless snake struggled until the last inch of its tail had disappeared into the other's mouth.

Some of the theories advanced with such care-free assurance are to be viewed with caution (as that rods are developed from cones or that red and blue-green were the first colours to be appreciated), but Mr. Prince is a born observer, and observations—many of them original—are here in plenty. It is to be hoped he will soon set out on his travels again and let us have the pleasure of reading the second volume which he promises.

Sight, Light and Efficiency reminds us that the many problems of lighting, visual efficiency, and the care of the eyes at work are of interest to a wide circle. They concern not only the oculist, the industrial medical officer, the illuminating engineer, and the personnel representatives on industrial staffs, but also the industrialist or works manager, the foreman, and the worker, whose interests lie in the efficiency, safety, and comfort of industrial plants or offices. These problems have been somewhat neglected by British industry as a whole, and there is no doubt that if there were a wider realization of the benefits which almost invariably accrue from scientific illumination and adequate visual hygiene the dividends paid in increased production and improved morale at work-places would surprise most people who have not made a special study of these matters.

It is no easy task to present the results of the great amount of technical research which has been directed to these problems, largely in this country and America, so that they are comprehensible to a varied and wide audience, the most important part of which is non-technical. In this Mr. Weston, whose original contributions to the subject are well known, has succeeded to a surprising degree. Nowhere else in this country will the case for visual efficiency and safety be found so well and authoritatively advanced. The sense is admirably conveyed throughout by profuse illustrations and diagrams, many of which reveal more than usual originality. It is to be hoped that the book will enjoy a wide distribution, for it cannot fail to exercise an influence for good in a field which is too frequently neglected, and at a time when industrial efficiency and the maintenance of a high morale is of paramount importance in the national interest

STEWART DUKE-ELDER

A REVIEW OF HAEMOLYSIS

Hemolysis and Related Phenomena. By Eric Ponder. (Pp. 398; 69 illustrations. $6.00 or £2 10s.) New York: Grune and Stratton. London: J. and A. Churchill. 1948.

Here is a monograph of outstanding interest, particularly to the haematologist and the bio-physicist. No one is more competent than its author to present a critical review of the subject. He has made an authoritative and thought-provoking contribution to the complex and baffling series of problems of haemolytic phenomena in relation to the mammalian red cell. Dr. Ponder says that he has not set out to provide a compendium or source-book on the subject, but rather to act as a guide to those interested in the fundamentals of haemolytic phenomena.

In the first two chapters he considers shape changes in the red cell, with or without alterations in its volume. There is a full discussion of mammalian red cells, the disk-sphere transformation, various obscure phenomena, and atypical forms of mammalian red cells. Then follows a discussion on the measurement of red-cell volume, the principles and practical details of the different methods used, the effects of hypotonic media with their osmotic discrepancies, metastable states of the mammalian red cell, fragility measurements, and the factors influencing the rate of volume change.

Chapter four describes the cytochemistry and architecture of the red cell, including a consideration of the reversible sickling phenomenon and its bearing on the problem of red-cell structure, changes in the physical and chemical properties in disease, and cell inclusions.

In connexion with the kinetics of haemolysis, the author discusses the formal kinetics, with percentage haemolysis curves, and the technical procedure and analyses of these curves. This is followed by a consideration of the events leading up to, accompanying, and following haemolysis,

prolytic ion exchanges, prolytic volume changes, and the spot-wise action of lysins. An interpretation is given of evidence derived from various measurements—for example, fading time, impedance of haemolysed cells, and electrophoresis. The measurement of inhibition and acceleration of haemolysis (chapter six) under different influences and conditions indicates some of the properties of complex haemolytic systems. The final chapter is concerned with haemolysis *in vivo*, in which many problems are posed for elucidation.

This monograph will not appeal to many readers, but it is an essential addition to the library of the serious worker in this subject. The book is full of information and most valuable critical discussions of techniques, old and new theories, and mathematical, biochemical, and biophysical considerations of the haemolytic phenomenon.

JOHN F. WILKINSON.

VARICOSE VEINS

Varicose Veins. By R. Rowden Foote. (Pp. 226; 205 illustrations and 3 coloured plates. £1 12s. 6d.) London: Butterworth and Co. 1949.

The author has discussed adequately a very difficult subject, and a study of this book will well repay the time spent. The advice given on this ever-controversial topic is sound and orthodox, and the steps of treatment are lucidly described. The author, in my own opinion, belongs to the correct school, in that he endeavours to achieve a good thrombosis of the entire system of varicosities by a combination of ligation and thorough injection.

It is hard to confine the discussion to varicose veins alone, and the author has dealt with deep thrombosis of the leg veins in addition. In this section enough weight has possibly not been given to the value of femoral vein ligation, both during the active phase and later when complications are appearing in the lower leg. Certainly the dismissal of Leriche's method of lumbar ganglionic injection would not be shared by those who have witnessed the dramatic response to this simple measure.

The book is adequately illustrated, but some of the photographs are poor and could be improved and wrongly placed incisions marked plainly on the legs. Mistakes are few—equin(c)us (p. 186); and Leahy's swabs (p. 94), though small things, are Lahey's own. In the excellent photograph of an arterio-venous aneurysm (p. 49) the increased length of the leg is not commented upon. The historical chapter is excellent, but one looks in vain for the eccentric Baynton who did so much for varicose ulceration.

A. DICKSON WRIGHT.

British doctors have a characteristic fondness for old hospitals, old prescriptions, old signs, and old jokes, and the fifth edition of *Round the Fountain* (pp. 243; 4s.; London: St. Bartholomew's Hospital Journal, 1949) should satisfy all four weaknesses. It is a collection of excerpts from the *St. Bartholomew's Hospital Journal* from 1893 to this year. Some of the material has been published in previous editions, and the best of the last 22 years has been added. Bart's seems to produce poets rather than prose writers, which is unfortunate, as the general standard of the articles is superior to that of the verse. A few passages have the laboured construction of old pieces from *Punch*, but most of the book reads freshly and entertainingly. It is also something of a social-history book, occasionally throwing light on the spacious and more leisured days earlier in the century—for instance, in a serious discussion by a houseman on dressers there is reference to those who "could not . . . be deterred from taking off their hats to me in the Square . . . and who would invite me to dine at their clubs." All students should read "The Keen Man," and every newly qualified resident would profit from the paper on "Housemaniasis." The book is not sufficiently parochial to exclude graduates of other hospitals from its enjoyment; Bart's men, of course, will skip through all the pages with delight.

BOOKS RECEIVED

Review is not precluded by notice here of books recently received

The Proceedings of the Ninth International Congress on Industrial Medicine. (Pp. 1,090. 60s.) Bristol: John Wright. 1949.

Soviet Genetics and World Science. By J. Huxley, D.Sc., F.R.S. (Pp. 245. 8s. 6d.) London: Chatto and Windus. 1949.

The Diagnosis and Treatment of Adrenal Insufficiency. By G. W. Thorn, M.D., and others. (Pp. 171. 40s.) Oxford: Blackwell Scientific Publications. 1949.

Urological Aspects of Spinal Cord Injuries. By G. C. Prather, M.D. (Pp. 146. 27s.) Oxford: Blackwell Scientific Publications. 1949.

Diagnosis and Therapy of Gynecological Endocrine Disorders. By C. L. Buxton, M.D., and E. T. Engle, Ph.D. (Pp. 62. 14s. 6d.) Oxford: Blackwell Scientific Publications. 1949.

The Neuroanatomic Basis of Surgery of the Autonomic Nervous System. By A. Kuntz, Ph.D., M.D. (Pp. 83. 16s. 6d.) Oxford: Blackwell Scientific Publications. 1949.

The Rationalist Annual, 1950. Edited by F. Watts (Pp. 100. Cloth cover, 4s. 6d.; paper cover, 2s. 6d.) London: Watts. 1950.

Clinical Radiation Therapy. By I. I. Kaplan, M.D., F.A.C.R. 2nd ed. (Pp. 844. 110s.) London: Cassell. 1949.

Chemical Constitution and Biological Activity. By W. A. Sexton, B.Sc., F.R.I.C. Foreword by A. R. Todd, D.Sc., F.R.S. (Pp. 412. 55s.) London: Spon. 1949.

Selective Toxicity and Antibiotics, No. 3. (Pp. 372. 35s.) Cambridge: The University Press. 1949.

Tuberculosis. By J. B. McDougall, C.B.E., F.R.C.P.Ed. (Pp. 447. 32s. 6d.) Edinburgh: Livingstone. 1949.

The Pocket Prescriber and Guide to Prescription Writing By D. M. Macdonald, M.D., F.R.C.P.Ed. Revised by A. G. Cruickshank, F.R.C.P.Ed. 14th ed. (Pp. 275. 4s. 6d.) Edinburgh: Livingstone. 1949.

How Your Body Works. By G. H. Bourne, D.Sc., D.Phil. (Pp. 228. 12s. 6d.) London: Sigma Books. 1949.

Lord Lister. His Life and Doctrine. By D. Guthrie. (Pp. 128. 15s.) Edinburgh: Livingstone. 1949.

The Radcliffe Infirmary Handbook. (Pp 150. No price.) Oxford: University Press. 1949.

Home-made Sweets. By N. Heaton. (Pp. 123. 6s.) London: Faber. 1949.

Colours and How We See Them. By H. Hartridge, M.R.C.P., F.R.S. (Pp. 158. 15s.) London: Bell. 1949.

Law Relating to Hospitals and Kindred Institutions. By S. R. Speller, LL.B. 2nd ed. (Pp. 587. 42s.) London: Lewis. 1949.

Isotopic Tracers and Nuclear Radiations with Applications to Biology and Medicine. By W. E. Siri. (Pp. 653. 106s. 6d.) New York, Toronto, London: McGraw-Hill Book Company. 1949.

A Short History of Physiology. By K. J. Franklin, D.M., F.R.C.P. 2nd ed. (Pp. 147. 10s. 6d.) London and New York: Staples. 1949.

The Development of Gynaecological Surgery and Instruments. By J. V. Ricci, M.D. (Pp. 594. $12.) Philadelphia and Toronto: The Blakiston Company. 1949.

Physio-Pathologie de l'Acide Oxalique chez l'Homme. By J. Khouri. (Pp. 120. No price.) Paris: Masson. 1948.

Pocken und Pockenschutzimpfung. By M. Kaiser. (Pp. 207. $3.80.) Vienna: Springer. 1949.

Bronquitis Crónicas. By D. A. M. Barbero. (Pp. 89. No price.) Barcelona: Ediciones Byp. 1949.

BRITISH MEDICAL JOURNAL

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SENSE AND INSTABILITY

In the opening pages of this week's *Journal*, published the day before Christmas, Dr. Russell Brain takes us away from the chief preoccupation of the medical man and a medical journal. No mean poet himself, he follows in the line of many learned physicians of the past in his interest in literature. In the brief "case histories" he records so well he illustrates his chosen theme of mental instability and literary genius. The world would seem to be reasonably well supplied with neurotics and psychopaths. Some of them have a brief burst of publicity in the columns of the sensational press; most of them suffer in obscurity and perplex only their relations and their doctors. But when a genius such as William Blake says he has spoken with Elijah in the field, the question is quickly asked whether this unusual manifestation is causally linked to his creative ability. The question has been asked about Darwin, and about Newton, whose eccentricities lapsed into near-madness when he accused John Locke of seeking to embroil him with women. Whether in science, in painting, in music, or in literature, one has not to look far for examples of what we commonly call abnormal behaviour.

Dr. Brain's list of psychopathic authors is at first sight formidable, and all the more so because it supports the popular impression that genius in writers is a near neighbour to madness, or even an inseparable companion. We are wary of having our preconceptions confirmed only by a list of cases that support them, but Dr. Brain cautiously concludes that "more than one process which the psychiatrist calls pathological may be an essential element in the virtues of genius—and perhaps of the rest of us." On the other hand, many great writers could be cited who never seem to have crossed the forbidden frontier. Yet we are left uneasily asking, How many? Since the limits of both genius and mental instability can be defined only arbitrarily, the question is likely to be left unanswered, and Dr. Brain poses it in another form: "Is normality more than a statistical myth?"

The common man, whose century this is supposed to be, would probably answer yes, for the idea of normality is certainly a popular myth and one of fairly recent evolution. It has been nurtured by the work of administrators and scientists, men who must abstract from a mass of data some general principle that can guide their actions when they set to work on the people or materials concerned. Since science and administration have come to penetrate every cranny of the citizen's life, their abstractions have crept into his mind and reappeared as beliefs. The arithmetical mean shines forth as normality. Common sense allows the normal to vary within limits on either side of the average, but for human conducts sets limits that alter in accordance with social circumstances. The limits of normality, like the average, are a myth founded on an arithmetical abstraction—the standard deviation.

Yet it must be admitted that, even if mental normality is a "statistical myth," writers themselves, in the words of Harold Nicolson,[1] "are largely to blame if the general public regard them as unbalanced." Citing Plato, Burton, Shakespeare, Dryden, Macaulay, and Lamartine as authorities for this "distressing theory," he pleaded that it is more a legend than a true account of the facts. Burton put his own opinion beyond doubt in the words, "All poets are mad"; and Baudelaire confirmed it when he recorded in his notebook, "J'ai cultivé mon hystérie avec jouissance et terreur." Since both these writers were at times mentally deranged, it is doubtful how general among men of genius their experiences were. We might cite in defence the work of Terman and his colleagues[2] in California. Since 1922 they have followed the development of a group of people with great intellectual gifts, and found that the mortality and insanity rates of the group are lower than those for the corresponding age groups in the general population. The divorce rate is also lower, and the delinquency rate is very low. But though men of genius are usually highly intelligent the converse is obviously not true, and the Californian group do not display genius as the word is used here. We cannot infer that, because the men discussed by Russell Brain reveal some gifts greater in degree than the selected Californians, they are a comparable group and should therefore have lower rates of insanity and so on. For their work enshrines an extraordinary creativeness that must be accompanied by gifts not found in men who are merely highly intelligent.

Dr. Brain concludes that there is a quantitative factor worth considering, and we may admit that, without designating them insane, most writers of genius have a greater range of variation in their personality than the common reader. More daring than most in their exploration of the richness of humanity, they have felt more keenly its glory and its guilt. The anxieties that afflict us all rock tempestuously these most sensitive, perceptive, and intelligent of men. Wilfred Trotter's observation that there can be no approach to truth without a threat to one's personality goes far to explain why

[1] *British Medical Journal*, 1947, **2**, 782.
[2] *Psychological Approaches to the Biography of Genius*, Eugenics Society, 1947.

many writers have found a close alliance between genius and madness. Threat to personality was felt acutely by that abnormal man and many-sided genius Leonardo da Vinci, who wrote that to create he must be solitary: "While you are alone you are entirely your own, and if you have one companion you are half your own." It is hard, even for the man of genius, to remain out of the herd and at the same time show signs and symptoms of behaviour that the herd dubs normal. This anarchic tendency of his mind may progress so far that, like van Gogh, he may eventually find himself in an asylum in the company of other solitaries who, apart from their similarity to him in madness, differ completely in the commonplace nature of their achievements. It would seem that literary and artistic genius flourish in a society that is stable and prosperous, and wilt in a society that is unstable—another theme, perhaps, for Dr. Russell Brain to explore for our entertainment and delight.

A RITUAL OPERATION

Little is known of the origin of circumcision, despite the very considerable literature on the subject.[1] At its inception the practice seems to have had an essentially religious connotation and to have arisen independently in the continents of Africa, America, and Australia. Among the Semitic races it is probable that circumcision started as an act of consecration to the goddess of fertility with the object of winning her favour and thus ensuring the birth of children. Circumcision in ancient Egypt was certainly not undertaken for hygienic reasons, and probably it served as a sanctification of the reproductive faculties and a ceremonial initiation. It is likely that the ancient Pharaohs were circumcised, the circumcised state being a necessary qualification for the priesthood. It is reported that Pythagoras had himself circumcised while in Egypt so that he might be fully initiated into the esoteric religious rites of the Egyptians. Among others, notably the American Indians, circumcision was mainly adopted as an alternative to human sacrifice. Although circumcision is widespread in Moslem communities the Koran contains no specific ordinance on this subject. Mohammed is said to have been born without a prepuce, and the possession of a foreskin was regarded as a disgrace amongst the Arabs. It is reported that after one of the Prophet's battles a slain Thaqafite tribesman was found uncircumcised, and great pains were taken to prove that he was a Christian and not truly a member of the tribe. In Arab communities the operation is performed with scissors, a razor, or a split reed, and there is a tradition that Abraham used an axe and was rebuked for his haste.

Some of the methods of disposal of the foreskin are more a matter for interest than emulation. The Levites during the Exodus piled their foreskins in the wilderness and covered them with earth; in parts of West Africa, where the operation is performed at about 8 years of age, the prepuce is dipped in brandy and eaten by the patient; in other districts the operator is enjoined to consume the fruits of his handiwork, and yet a further practice, in Madagascar, is to wrap the operation specimen in a banana leaf and feed it to a calf. In happy contrast to some of these macabre practices is the habit of the Bani Chams in Australia, who merely perform a mock ceremony with a wooden knife and leave their victims unscathed.

In Britain, while the practice of circumcision is widespread, there are rather different reasons for its performance, and, though exact figures are difficult to obtain, it would seem that more than half the male members of the population are circumcised. Many doctors have for long rebelled against the wholesale and somewhat primitive lopping of the infant foreskin which goes on in some out-patient departments and surgeries. On these occasions the technique of the operation is frequently deplorable; sacrifice of skin is often too generous, and attendant damage to the glans penis or fraenum is not unknown. If these criticisms are valid then it may well be asked why large numbers of doctors permit and encourage a practice which so savours of the barbaric. Religious considerations apart, it is not easy to find a rational argument for circumcision in most cases, and the operation is more often performed because it is *de rigueur* in certain districts or a habit in some families.

Dr. Douglas Gairdner's valuable study, "The Fate of the Foreskin," which appears at page 1433 in this issue, will, we believe, make many readers pause for reflection. Though medical opinion about circumcision may be more conservative than it used to be, yet even to-day the attitude of the profession in general to the subject is too often based upon false ideas of the anatomy and physiology of what is a useful cutaneous appendage. Of the value of the prepuce in the first two or three years of life there is no doubt, for it has an important function in covering and protecting the glans penis. Contrary to widespread belief, non-retractability, a frequent finding, is not synonymous with phimosis. There can be little medical justification for routine circumcision of the infant, and the operation is only occasionally necessary under the age of 3. After this age operation is indicated for cases of non-retractability with true phimosis and for those with recurrent preputial inflammation or paraphimosis. Circumcision should be limited in extent: the fraenal region must not be damaged, and sufficient skin must be left to cover the very sensitive corona glandis. Although the operation of dorsal slit is unpopular with

[1] Hastings, J., *Encyclopaedia of Religion and Ethics*, 1910, vol. 3, Edinburgh.
[2] Kennaway, E. L., *Brit. J. Cancer*, 1947, 1, 335.
[3] Ibid., 1948, 2, 177.

some, it is both satisfactory and simple to perform, and the ultimate cosmetic result is good.

Apart from the local reasons for circumcision it is argued by some that it will reduce the incidence of venereal disease, cancer of the penis, and cancer of the cervix uteri. The evidence supporting the first of these contentions is inconclusive; the second is established beyond doubt; while the available data on cancer of the cervix do not warrant the conclusions which have been drawn by some authorities. As Dr. Gairdner points out, it is likely that lack of cleanliness is more important than lack of circumcision in the case of venereal diseases and cancer of the penis. If the latter was not a very uncommon disease in this country it alone might provide justification for widespread emulation of the Jewish custom. The Mosaic law enjoins the practice of circumcision on the eighth day, and it appears certain that this ritual circumcision affords complete protection against carcinoma of the penis. Furthermore it has been shown that circumcision between the third and fourteenth years of life does not give complete protection against penile carcinoma.[2] In the absence of more convincing evidence about carcinoma of the cervix it is difficult to ascribe its low incidence in Jewesses to the circumcision of their spouses. As Kennaway[3] has pointed out, the data are inadequate, and the low incidence in certain other races cannot be explained by the practice of circumcision. It seems safe to say that if Dr. Gairdner's recommendations are accepted much circumcisional morbidity and mortality will be avoided and, further, that there is no good reason to fear increased incidence of venereal disease or genital cancer as a result of this policy.

RADIOLOGY IN OBSTETRICS

The technical difficulties of obstetric radiography have prevented it from being so generally accepted as radiography in such other fields as the diagnosis of fractures or of diseases of the chest. At this year's Annual Meeting of the British Medical Association in Harrogate there was an interesting discussion in the Section of Obstetrics and Gynaecology on radiology in obstetrics, and two of the papers contributed to that discussion appear in the present issue of the *Journal*.

Professor J. Chassar Moir, describing the use of radiographs for assessing disproportion, begins with a plea for closer co-operation between the radiologist and the obstetrician. He himself has set the excellent example of being his own radiologist, but this happy combination is a rare one, since few obstetricians have the aptitude, training, or indeed the time to master the difficult and exacting technique of pelvic radiography. Professor Moir is the first to recognize the limitations of the method. It can give no more than a mechanistic picture of cephalo-pelvic disproportion, and it cannot measure such other factors as the efficiency of the uterine muscle or the mouldability of the foetal head. Nevertheless, mechanical difficulty remains the commonest cause of dystocia, and in skilled hands the radiographic method of measuring both the maternal pelvis and the foetal skull can achieve an accuracy far superior to anything that can be achieved by clinical means. There are probably two reasons why this method has not received universal acceptance as an essential part of obstetrical diagnosis—first because inaccurate measurement is all too easy in the absence of adequate skill and experience, and secondly because equipment for this type of radiography has not yet been used sufficiently widely for the method to have became a routine diagnostic procedure. Professor Moir makes the point that pelvic shape is at least as important as pelvic size, and the traditional measurement of the true conjugate may be of little value unless the other diameters of the pelvis are taken into account. Here radiography is of the greatest value, since it is the only means by which an accurate measurement can be obtained of the transverse diameter of the pelvic brim or by which a true picture of the shape of the pelvis can be obtained in the living subject. Pelvic size and shape, however, must be considered in relation to the measurement of the foetal skull in assessing disproportion. Most of the recent work on pelvic radiography has been concerned with these two factors, and many ingenious methods of relating them have been described. Professor Moir has devised three charts—for the brim, cavity, and outlet—from which an impression can be gained about the level at which difficulty may be expected with different sizes of foetal head. By this means he has succeeded not only in predicting difficulty in labour but also in indicating the cases in which an easy and rapid labour can be confidently expected. Obstetric radiography has tended to diminish rather than to increase the use of caesarean section, since in many cases where clinical examination appeared to reveal disproportion radiography has shown that, even when the pelvis was contracted, vaginal delivery was possible because the baby was small.

Measurement of the maternal pelvis can, on the whole, be made with more accuracy than measurement of the foetal skull. Dr. S. Josephs, in the second paper on this subject, discusses the intrauterine measurement of the foetal biparietal diameter. The accuracy of these measurements was checked after delivery of the child by independent observers who had no knowledge of the previous readings. Dr. Josephs does not give details of the actual method employed, but the results are impressive. The radiological method tended to overestimate the size of the head by 0.02 in. (0.5 mm.), but in the whole series it was found possible to predict the size of the biparietal

diameter to within 0.1 in. (2.5 mm.) in 75% of cases and to within 0.15 in. (3.75 mm.) in 95% of cases. One remarkable result of this investigation was that no growth of the biparietal diameter of the foetal skull could be detected between 36 weeks and 40 weeks. If this is confirmed it overthrows an opinion which has been generally accepted since the work of Scammon and Calkins[1] in 1929 indicated that the biparietal diameter of the foetal skull increases in size at the rate of 0.1 in. per week during the last four weeks of pregnancy. If it is true that the diameter of the foetal skull does not increase during the last four weeks of pregnancy—and confirmation of this observation is a matter of great importance—then it should be possible by radiological examination to predict the probable course of labour at any time from the thirty-sixth week to term. Study of the growth curve between 30 and 36 weeks also becomes of greater importance; simple clinical observation shows that the child's head must grow at some time between the thirtieth and fortieth weeks.

Though pelvic radiography must be regarded as still in an early stage of development, equipment for radiographic cephalo-pelvimetry should be provided in every maternity unit. The closest possible co-operation between the radiologist and the obstetrician is essential —ideally each case should be discussed as a diagnostic problem, and the results should be available to both. Great accuracy in measurement is also necessary, and it should be possible for radiographs to be taken during the course of labour. Radiographic pelvimetry is chiefly of value in doubtful cases of cephalo-pelvic disproportion, but the clinical features of the case require careful consideration, since radiology can do no more than exclude one important cause of dystocia. It would be wise, however, to carry out pelvimetry in every case where caesarean section is contemplated for disproportion, except perhaps in the case of obvious gross pelvic contraction, now rarely seen in this country. By this means some patients may be selected for trial labour and accomplish vaginal delivery who would otherwise have been subjected to elective caesarean section. One of the results of radiographic measurement of the pelvis has been the overthrow of many of the traditional ideas of the normal measurements of the pelvis. Since the time of William Smellie it has been assumed that the true conjugate should normally measure 4¼ in. (10.6 cm.), but recent radiographic studies have shown that the normal measurement is 4½ to 4¾ in. (11.3 to 12 cm.). Further, it is now doubtful whether the conventional external measurements of the pelvis, the interspinous, intercristal, and external conjugate diameters, have any practical clinical value. In fact they may often prove misleading, since a normal pelvis often exists with small external measurements, while the pelvis may be contracted though the external measurements are normal. Another important fact disclosed by radiographic pelvimetry is that dystocia may arise from contraction in any plane of the pelvis and not only, as was formerly assumed, at the brim or the outlet. It has also greatly increased understanding of the problems raised by outlet contraction. It appears certain that further technical advances will be made and that radiography for the detection of cephalo-pelvic disproportion will become as commonplace to the obstetrician as, for example, radiography of the lungs is to the chest physician.

[1] *Growth in the Foetal Period*, 1929, Minneapolis.

INHIBITION OF AN ENZYME

Man's internal environment, his essential saline heritage, is preserved mainly by his kidneys. It is a strange evolutionary paradox that this internal environment, to be preserved within its needful narrow limits, must be constantly externalized as a copious protein-free glomerular filtrate, most of which is reabsorbed as it flows over the great and discriminating surface of the renal tubular epithelium. The excretion and selective reabsorption of this internal environment is one of the major circulations of the body. Homer Smith,[1] illustrating its magnitude, states that each day the energy of the heart and blood pressure pumps out as glomerular filtrate 170 litres of fluid, containing nearly half a pound (227 g.) of glucose and over three pounds (1.36 kg.) of sodium chloride, on to the surface of the renal tubular epithelium. As Smith writes, "Thus heart and kidney are literally pitched in constant battle against each other—our lives depend on neither one of them ever winning out." The wards of a general hospital are a reminder that the battle is ceaseless and that man is indeed delicately poised between dropsy and desiccation.

Among the achievements of the renal tubular epithelium in this circulation is its ability to excrete the excess acid of man's usual diet without a corresponding depletion of his stores of body base. R. F. Pitts,[2] reviewing concepts of this mechanism, strongly supports Homer Smith's view that this is accomplished by an exchange between distal tubular cells and distal filtrate of positive hydrogen ions for positive sodium ions. The tubular cells, rich in the enzyme carbonic anhydrase, excrete the positive hydrogen ions from carbonic acid, which is obtained from the dissolved carbon dioxide of the capillary blood and as a product of renal cellular metabolism. The positive hydrogen ions are exchanged for the positive sodium ions from the fixed base of the distal filtrate, the sodium ions being returned to the blood stream as sodium bicarbonate. The carbonic anhydrase in the distal tubular cells is an essential part of this mechanism, which serves the dual purpose of excreting acid and conserving sodium bicarbonate. Inhibition of carbonic anhydrase in this cycle might therefore be expected to diminish the reabsorption of sodium, forcing it out of the body, to promote acidosis by diminishing the

[1] *Lectures on the Kidney*, 1943, Kansas.
[2] *Fed. Proc.*, 1948, **7**, 418.
[3] *The Physiology of the Kidney*, 1937, New York.
[4] Pitts, R. F., and Lotspeich, W. D., *Amer. J. Physiol.*, 1946, **147**, 138.
[5] Mann, T., and Keilin, D., *Nature, Lond.*, 1940, **146**, 164.
[6] *New Engl. J. Med.*, 1949, **240**, 173.
[7] *Lancet*, 1949, **1**, 683.

excretion of hydrogen ions, and thus to lessen the acidity of the urine.

This enzyme inhibition has been produced experimentally by giving sulphanilamide,[4] which by virtue of its free sulphonamide group is a specific inhibitor of carbonic anhydrase.[5] Schwartz[6] attempted to force a therapeutic loss of sodium from the body in congestive heart failure by the administration of sulphanilamide and obtained a limited success in three patients. His results supported the ionic exchange concept and were in accord with the predicted biochemical changes. He emphasizes, however, that the drug is too toxic for further trials and he hopes to find a less toxic compound containing a similarly effective free sulphonamide group. It is possible that a similar enzyme inhibition may be the fundamental biochemical lesion in some clinical cases of acidosis. Stapleton[7] recently reported a case of idiopathic renal acidosis in a child with severe dehydration, chronic malaise, and vomiting. The urine, however, remained alkaline and contained sodium bicarbonate despite an abnormally low plasma bicarbonate. The biochemical pattern and the child's health were restored when she was sustained by protracted administration of alkali. Stapleton suggests that in this form of acidosis the biochemical lesion may be an inhibition of carbonic anhydrase. These experimental, therapeutic, and morbid variations all illustrate a vital part of the external circuit of man's internal environment, a circuit in which 400 g. of sodium bicarbonate are tentatively excreted each day, roughly five times the total body store of available base.[4]

MEDICAL DICTIONARIES

So detailed has the study of medicine become that the student taking his final examinations must already have mastered the equivalent of a foreign language if he is to make his terminology understandable to the examiners. Though most medical terms are of Latin or Greek origin, many students now have little Latin and less Greek. When he goes on to do some research or extend his interests the student finds that a knowledge of French and German is desirable, and many of the examinations for higher qualifications require him to translate a piece from one of those languages. Though there are a number of helpful dictionaries for the more commonly used languages it is questionable whether they are adequate for the research student's requirements, and, now that more countries where Slavonic languages are spoken are producing books and journals that should be read, the need is increasing for dictionaries giving an up-to-date translation into English of medical terms from the Russian, Bulgarian, Serbo-Croat, and the others. Discussing the journals in foreign languages read in libraries, Dr. Raymond Whitehead[1] said recently: "The insignificant representation of other foreign languages [than French and German] probably means that few if any users of the library read them; it does not mean that the medical literature in these languages is unimportant—evidence to the contrary is provided by a steady demand for translations from them by those using the library."

A report on technical dictionaries prepared for Unesco by J. E. Holmstrom[2] shows that, though there are three medical dictionaries into Russian, there are apparently none from that language into English, nor are there any from Portuguese into English or from English into Portuguese. Two good modern medical dictionaries connecting English with French both ways are said to be in the press. As Mr. Holmstrom points out: "Adequate provision of medical dictionaries is to be regarded as a matter of indirect but urgent humanitarian importance, equally for languages in which original research is published and for those of medically backward countries such as China." The need of these medically backward countries is now great, for many are developing the technical resources that will enable them to make use of research carried out in countries at present more advanced technically. In a rather different category are India and Pakistan. As their link with Britain becomes less intimate than formerly, presumably fewer of their medical men will be able to read and write English with facility, and adequate medical dictionaries will be needed for them if they are to keep in touch with the scientific advances of the English-speaking world. There is no necessity yet for a British-English–American-English medical dictionary, but Mr. Holmstrom shows that in some branches of technical terminology, notably in engineering, we and the Americans often give quite different names to the same thing. We can only hope that such divergence does not become common in medicine.

Mr. Holmstrom suggests that Unesco should gather further information and criticisms of the report, and then consider establishing an international terminological bureau under the joint auspices of Unesco and the International Organization for Standardization. The bureau might be located at Geneva, so that it could be in close touch with the latter organization, or it might be attached to the Science Museum Library in London, or to some other established bibliographical centre. The bureau would conduct research into technical terminology and dictionaries, compile and publish standard terminological definitions and equivalents, and, when any definitions, equivalents, or sketches had been approved by the appropriate bodies, authorize them to be printed by commercial publishers accompanied by a suitable symbol indicating that they were approved by the bureau. He wisely considers that publishers should be at liberty to mix approved terms with any others, which would be unaccompanied by the symbol, for language depends on usage, which varies among writers.

The report includes an interesting speculation on whether an electronic machine might be constructed to produce translations. The possibilities are fascinating, though perhaps their realization is still rather remote. The machine translation might be full of "howlers," but an editor acquainted with the subject matter would be able to make it readable and accurate even though he did not know the language from which the work had been translated. Meanwhile the work of translating and abstracting from the world's medical literature is being carried out by more old-fashioned methods by *Abstracts of World Medicine* and *Abstracts of World Surgery*, which draw the attention of medical practitioners and students to the more important medical papers published all over the world and summarize the contents for them.

[1] *British Medical Journal*, 1949, 1, 147.
[2] *Interlingua Scientific and Technical Dictionaries*, Unesco, Paris, 1949.

FIBROCYSTIC DISEASE OF THE PANCREAS

The publication in 1938 of Dorothy Anderson's[1] series of 49 cases of fibrocystic disease of the pancreas led to recognition of the disease as a clinical entity. She divided the cases into three groups: neonatal, infantile, and childhood. Fourteen cases recently reported by Pitt[2] in Australia all belonged to the third group. In a paper which appeared in this *Journal* some weeks ago Matheson[3] described seven cases seen in one hospital between June, 1947, and September, 1948—this amounted to 2% of the medical admissions to the children's ward during that period. The evidence suggests that the disease is inherited,[4] and Matheson considers that the inheritance may be explained by incomplete dominance.

The signs of the disease are malnutrition, the frequent passage of large, offensive, pale stools, and cough, which may resemble whooping-cough. Clubbing of the fingers is usual. The appetite is good—a feature which distinguishes this condition from coeliac disease. Inadequate pancreatic secretion appears to cause a fatty liver and eventually cirrhosis, a process analogous to that which occurs in dogs after removal of the pancreas. The diagnosis is not always easy, but the presence of fatty stools with a high nitrogen content and signs of vitamin-A deficiency in a child without evidence of a tuberculous infection in the chest or abdomen are indicative. The fat content of the stools may be misleading, for although the amount is very high a large proportion may be found as split fat, owing to the effect of intestinal lipase and bacterial action. The older the stool when it is examined the higher the percentage of split fat will be.

Fibrocystic disease of the pancreas can be distinguished from coeliac disease by examination of duodenal contents, but the collection of duodenal juice from a child may not be a harmless procedure. The vitamin-A absorption curve is always subnormal, but this does not help to distinguish the condition from coeliac disease and other intestinal disorders. Recently attempts have been made to investigate protein metabolism by amino-acid curves; whereas there is a definite rise and fall over three hours in normal children and those with coeliac disease, the curve hardly departs from the fasting level in cases of fibrocystic disease of the pancreas. Radiographs of the lungs are said to show a stage of collapse associated with obstruction of the bronchi, and, later, great accentuation of the hilar shadows. Shadows in the lung fields characteristic of peribronchial infiltration have also been described.[5] It must be remembered, however, that respiratory infection often occurs in coeliac disease, and it would be hard to support a claim that the *x*-ray appearances of the lungs in fibrocystic disease are pathognomonic. Indeed, there is no single feature, with the exception of the alteration in the protein metabolism, which can be taken as a definite distinguishing sign between cystic disease of the pancreas and coeliac disease, though the respiratory disturbances are more severe in the former than in the latter. Therefore, when a case of steatorrhoea occurs in a child, the possibility of cystic disease of the pancreas should always be considered. The usual treatment is to give a high-calorie protein diet, with added vitamin A, and pancreatin by mouth. Fats should be restricted. For respiratory infections penicillin will be required. Matheson suggests that the results of treatment might be more successful than those generally obtained at present if the mucus which collects in the bronchial tree could be liquefied.

[1] *Amer. J. Dis. Child.*, 1938, **56**, 344.
[2] *Med. J. Aust.*, 1948, **1**, 91.
[3] *British Medical Journal*, 1949, **2**, 206.
[4] Anderson, D. H., *Proc. R. Soc. Med.*, 1949, **42**, 25.
[5] Attwood, C. J., and Sargent, W. H., *Radiology*, 1942, **39**, 417.

HUMAN PLASMA PHOSPHOLIPID FORMATION

A phospholipaemia is a common finding in association with liver disease and many other conditions. In any of these the raised plasma phospholipid may result either from over-production or from diminished utilization in the tissues. Radioactive tracers can be used to determine which of these two mechanisms is responsible. Radioactive phosphorus is incorporated within a few hours into the plasma phospholipids.[1] Accumulation of the latter in the plasma due to inadequate utilization would be indicated by a relatively low level of radioactive phosphorus, since the newly formed phospholipids would be diluted by those already accumulated. On the other hand a lipaemia due to increased synthesis would be reflected in a higher level of the radioactive element. Balfour[2] applied these principles to the study of lipaemia in twenty patients with various types of disease, including obstructive jaundice, nephrotic nephritis, and portal cirrhosis. Nine normal subjects were used as controls. In all cases whatever the cause of the blood lipid change, a direct correlation was found between the level of phospholipid in the plasma and the quantity of newly formed phospholipid as judged by its specific radioactivity. Since the liver is the main and probably the only source of plasma phospholipids,[3] it may be concluded that in all Balfour's cases the hyperlipaemia resulted from over-production in the liver. Since, however, the same results were obtained in cases of advanced liver disease, the liver appears to possess great powers of synthesis. Experiments by Chaikoff and his colleagues,[4] however, indicate that there may be an alternative explanation of Balfour's results. Using radioactive phosphorus as a tracer they found in dogs that choline increased the turnover of the phospholipid in the liver, but not in the plasma. They therefore suggest that the reduction in liver fat which is a consequence of the administration of choline is not due to increased transport but to increased utilization within the liver itself. A rise in plasma phospholipids in hepatic disease might therefore be expected if their intrahepatic consumption was more impaired than their production. Since hepatic injury, particularly if severe, is more likely to be associated with depression than stimulation of liver function it is more than probable that the apparent over-production of phospholipid results from impaired intrahepatic utilization.

[1] Artom, C., Sarzana, G., Perrier, C., Santangelo, M., and Segrè, E., *Nature, Lond.*, 1937, **139**, 836 and 1105.
[2] *Gastroenterology*, 1947, **9**, 686.
[3] Fishler, M. C., Entenman, C., Montgomery, M. L., and Chaikoff, I. L., *J. biol. Chem.*, 1943, **150**, 47.
[4] Ibid., 1948, **176**, 193.

REFRESHER COURSE FOR GENERAL PRACTITIONERS

THE MANAGEMENT OF ACUTE DYSPEPSIA

WITH SPECIAL REFERENCE TO GASTRIC AND DUODENAL ULCER

BY

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Dyspepsia is a common symptom for which there are many causes. Discomfort related to meals, epigastric fullness, flatulence, soreness, and heartburn may merely signify a disturbance of function of the stomach, often the result of some form of stress. This stress may be nervous or emotional, as from acute anxiety or sustained annoyance; or it may be physical, the result of over-fatigue, late nights, or insomnia; or it may be acting directly on the stomach from hurried meals, badly cooked food, or excessive drinking. Heavy smoking, habitual purgation, or continued use of aspirin may be having an irritant effect on gastro-intestinal function. A psychoneurosis is another possible reason for a functional dyspepsia.

These causes account for a high proportion of the dyspepsias. The next common cause is peptic ulcer, and again many of the above stress factors may have been present. Whether or not a given set of stimuli cause functional dyspepsia or produce an actual ulcer possibly depends on the time the adverse factors have been operating and on their intensity, both of which may also depend on the personality of the individual. The carefree fellow will meet his disappointments and frustrations with equanimity and quickly forget about them; the sensitive, worrying individual will magnify difficulties and bottle up his resentments, stimulating nervous impulses which pass down to his stomach and intestine. If he is also over-conscientious he will not stop working and rest like many of his fellow men. Sudden calamity in the life of a normal stable individual may be enough to fire the mechanism which produces the peptic ulcer, and acute symptoms may begin without any preceding indigestion.

Although this relation between stress and ulceration may often be found, there are many patients in whom the most careful inquiry will fail to reveal any untoward event preceding the onset of symptoms. Physical and mental stress are two aetiological factors, but there are probably others which are subtly associated with modern life and which have so far escaped recognition.

Differential Diagnosis

Other diagnoses have to be kept in mind, particularly for the milder degrees of indigestion. Carcinoma of the stomach is, numerically, an infrequent cause of indigestion, but must nevertheless be carefully excluded. Gall-bladder disease may produce a flatulent dyspepsia. Oesophageal hiatus hernia, or oesophageal ulcer may lead to acute discomfort, particularly when the patient lies down. Helminthic infestation is an occasional cause, and there are also diseases affecting other organs—e.g., cirrhosis hepatis, pulmonary tuberculosis, early heart failure, and incipient uraemia—which may produce dyspepsia.

Investigation

A careful history and examination are the first essentials, and may bring to light significant factors of probable aetiological importance. In the majority of cases a barium meal should be arranged, to increase the accuracy of the diagnosis. One is constantly being surprised to find gastric or duodenal ulcers in patients whose symptoms have been slight and atypical. However, it is not uncommon to receive a negative *x*-ray report on the patient with a convincing ulcer history. Examination of stools for occult blood is a valuable investigation, but a fractional test meal is of little diagnostic assistance. Gastroscopy is useful when there is a discrepancy between the clinical and radiological findings, and may clinch the diagnosis between a simple and a malignant gastric ulcer. In some difficult cases laparotomy is still the final arbiter.

Simple Stress Dyspepsia

This is mainly associated with anxiety states, and the symptoms lack the clear-cut periodicity of ulcer dyspepsia. Discomfort is common immediately after meals, and aerophagy is often present. The internal emotional tension may be well concealed at first, even though the individual may feel at the "end of his tether." A sympathetic hearing of the patient and a confident explanation of the mechanism of the symptoms, combined with adequate sedation and hypnotics, a holiday, and a review in four to six weeks, are the essentials of treatment. In particularly sensitive individuals initial rest in bed away from home may be desirable, and in other cases there may be some obvious physical stress which can be diminished.

Ulcer-like Dyspepsia with a Negative Barium Meal

There are patients who present with typical ulcer symptoms, yet the radiograph is reported as normal. These patients may have a history of recurring bouts of dyspepsia with gnawing epigastric pain related to meals, eased by food or alkaline powder, and possibly waking the patient at night. They should be regarded as having a peptic ulcer and treated just as energetically by rest in bed, antacids, sedatives, and a careful investigation of the personal aspects of their case. It is probable that many of these patients have subacute ulcers, as they tend to return later with undoubted evidence of peptic ulcer, or gastroscopy may reveal subacute (and occasionally chronic) lesions which have escaped radiological detection. At least three weeks' rest in bed should be advocated and the same treatment prescribed as for duodenal ulcer. In the past these cases have often received inadequate treatment, but if neglected at this stage irreversible changes may develop and a chronic ulcer supervene.

Duodenal Ulcer

The treatment of choice, especially for patients with a recent history, is initial rest in bed, preferably away from home; but that is often difficult to manage. Hospital accommodation in the country is totally inadequate to allow in-patient treatment of all but a minority of duodenal ulcer subjects.

Six weeks' rest in bed is desirable. Many patients will greatly prefer to continue at work, but this is to be resisted unless the rest in bed is clearly going to add to their anxieties. Rest in bed almost certainly favours the healing process, and it impresses the need for care much more

than if ambulatory treatment were undertaken. It provides opportunity for reflection and perhaps the adoption of a better perspective. The complete break will allow excessive commitments to be shed without loss of prestige. With rest in bed there must be adequate sedation during the day and adequate sleep at night, otherwise much of the benefit of the rest will be lost.

The radiological control of healing of duodenal ulcer is difficult and, indeed, impossible unless the ulcer crater is well seen initially.

Gastric Ulcer

The presence of a definite lesser-curve ulcer should always be regarded seriously. The characteristic niche, projecting cleanly from the middle of the lesser curve, is practically never a malignant ulcer; but an ulcer in the antrum, at the cardia, or well away from the lesser curve must be regarded with suspicion and investigated further.

Large gastric ulcers can heal even if the individual barely diets and stays at work, but it is extremely likely that without treatment the chance of the ulcer becoming chronic is greatly increased. Loss of pain is an entirely unreliable guide, for ulcers may remain present and symptomless for many months. The treatment of choice is rest in bed, preferably away from home, until healing takes place. This may be within three weeks, but it may need several months. Good convalescence should follow radiological healing of the ulcer, as gastroscopic studies have shown that the crater may still be present for several weeks after it has disappeared radiologically. Gastric ulcers are associated with a higher mortality than duodenal ulcers when they bleed or perforate, and there is the slight risk of malignancy. No compromise is possible, and if healing will not take place a partial gastrectomy must be advocated.

Dietetic Treatment

Treatment is based on the principle of giving two-hourly milk feeds and as pain subsides adding bland foods to maintain adequate protein, calorie, and vitamin requirements. The rate of increase must be decided in each case by the relief of pain. The diet should be attractive and colourful, as the irritation of a dull diet more than offsets the benefit from the loss of psychic stimulation of gastric secretion. The diets below are practical but not perfect, and more protein and fat in the form of eggs and cream would be of value.

The following dietary was given by Fletcher in 1948: reprints of his valuable pamphlet for patients can be obtained from *The Practitioner*. The patient should be told that the diet sheets should be regarded as a general guide, and that he must not get fussed or worried if occasionally he has difficulty in following them.

First Stage: Strict

Two-hourly milk feeds may be given, alternating with 5-oz. (140-ml.) feeds of egg and milk, or Benger's food, "ovaltine," "horlicks," malted milk, or junket. An example of stage 1 diet is given below.

8 a.m.—5 oz. of custard mixture
10 a.m.—5 oz. of milk
12 noon—5 oz. of custard mixture
2 p.m.—5 oz. of milk
4 p.m.—5 oz. of custard mixture
6 p.m.—5 oz. of milk
8 p.m.—5 oz. of custard mixture
10 p.m.—5 oz. of milk
(5 oz. = 140 ml.)

At night (if awake) 5 oz. of milk may be given.

All feeds should be taken warm (not hot), and plain water in small quantities may be allowed in addition. Between each feed (that is, at 9 and 11 a.m., and at 1, 3, 5, 7, and 9 p.m.) and at night, if awake, alkaline powder or medicine should be taken.

If there is vomiting the milk should be diluted half-and-half with water and only 3 oz. (85 ml.) taken at each feed.

If there is no vomiting and pain rapidly subsides the patient may be allowed two plain biscuits, or two small pieces of crisp toast buttered when cold. These are taken at 10 a.m., 2 p.m., and 10 p.m. with the 5 oz. of milk. If improvement continues the patient may be given a little strained porridge or patent cereal baby food at 8 a.m. and a small helping of pudding at 12 noon and 8 p.m. for two or three days before starting the stage 2 diet.

Extra nourishment can be obtained by adding a teaspoonful of sugar to each feed, and this should be done if the diet is taken for more than two days.

The milk feeds may be flavoured with a little cocoa or with "ovaltine," "bourn-vita," or "horlicks," or the milk may be taken in the form of junket.

Custard Mixture.—This should be prepared for the day by stirring two eggs (fresh or reconstituted dried) into 16 oz. (450 ml.) of milk. Before the mixture is served it should be thickened by warming and, if desired, flavoured with vanilla or chocolate. If one cannot get enough eggs to make the custard mixture, a proprietary brand of "strained custard pudding" may be used or better still a "fortified milk mixture" made by adding 2 oz. (55 g.) of dried milk powder or 1½ oz. (40 g.) of dried protein milk—i.e., "prosol" ("trufood")—to 1 pint (570 ml.) of milk.

Second Stage: Moderate

An example of a stage 2 diet, which is considerably fuller, is given here.

6 a.m.—5 oz. of warm milk.

8 a.m.—Small helping of patent groats, patent barley, or strained porridge made with milk to which "bemax" may be added; two slices of crisp toast, buttered when cold; one lightly boiled or poached egg, or scrambled dried egg; 5 oz. of milk flavoured with weak tea; jelly, honey, or syrup.

10 a.m.—5 oz. of warm milk.

12 noon.—Small helping of steamed fish or egg, as at 8 a.m.; two slices of crisp toast or plain biscuits with butter; small helping of pudding; 5 oz. of milk (including that used in pudding); add small helping of creamed potato after one week on stage 2 diet.

2 p.m.—5 oz. of warm milk or milk pudding (for example, junket, egg custard, or corn-flour).

4 p.m.—5 oz. of milk with weak tea; two slices of crisp toast or biscuits with butter; small slice of plain cake, jelly, syrup, or honey.

6 p.m.—5 oz. of warm milk or cream of vegetable soup.

8 p.m.—Same as at 12 noon.

10 p.m.—5 oz. of warm milk.

The times may be varied so long as the intervals between feeds are not longer than two and a half hours. Sugar or glucose may be taken as desired. If the patient is thirsty, water or fruit juice may be taken, but not more than 5 oz. at a time. The milk feeds may be flavoured with a little cocoa, "ovaltine," "bourn-vita," "horlicks," or very weak tea, or they may be taken in the form of junket.

Ascorbic acid tablets (50 mg.), blackcurrant purée, or rose-hip syrup should be taken daily.

Third Stage: Convalescent

A sample diet for stage 3 is as follows.

Breakfast.—Cornflakes, patent groats or barley, or strained porridge with "bemax" and 5 oz. of milk; lightly boiled, poached, or scrambled egg (shell or dried); bread or toast and butter; weak, milky tea; honey, syrup, or jelly.

Dinner.—Boiled, steamed, baked, or grilled white fish, soft roes, tripe, brains, sweetbread, chicken, or rabbit. White sauce. Lamb, tender beef, or liver, minced if possible, may be allowed; mashed potato; soft parts of well-cooked root or green vegetables (sieved if possible) or cauliflower; pudding (see below); bread or toast and butter.

Tea.—Bread or toast and butter; plain cake, or biscuits; milky tea; honey, syrup, jelly, or pea-nut butter.

Supper.—Boiled or steamed fish, egg as at breakfast, or grated cheese; bread or toast and butter; sieved vegetables; milk (with weak coffee, tea, or cocoa) or milk vegetable soup.

(*Note.* The bread should not be new; the toast should be crisp and buttered when cold).

In addition to these four main meals, one of the following snacks should be taken in the intervals between them, before going to bed, and if awake at night, so that the patient never has more than two hours during the day without taking food.

Snacks.—Small cup of milk (flavoured with weak tea, very weak coffee, "ovaltine," "bourn-vita," cocoa, or "horlicks," if desired); or ½ oz. (15 g.) of plain or milk chocolate; or two or three tablets of "horlicks" malted milk or "ovaltine," or two plain biscuits or slices of crustless bread with butter and jam or paste, or a slice of plain cake.

Ascorbic acid and medicine should be taken as in stage 2 diet.

Suitable Puddings.—Suitable puddings may be made from junket, well-cooked rice, ground rice, corn-flour, semolina, tapioca, vermicelli, arrowroot; and flavoured with coffee, chocolate, caramel, almond, or vanilla. Milk jelly and all other kinds of jelly; custard, baked or boiled; blancmange; steamed sponge or castle puddings; fruit fool; sieved stewed apples, pears, prunes, plums; sweet omelet; queen of puddings; meringues, ice-cream, trifles, sieved apple charlotte.

Medication

The most important single drug in the management of peptic ulcer is phenobarbitone, given in sufficient doses to have the desired effect of sedation. The dose must be worked out individually for each case, starting with ½ gr. (32 mg.) three times a day. Sodium amytal is a valuable alternative, starting with ¼ gr. (48 mg.) t.d.s.

Antacids are of some value during the initial phase, and "aludrox" or "lactalumina" may be given, one dessertspoonful with water four to six times daily, half to one hour after meals. Other antacids recommended are magnesium trisilicate (30 gr.—2 g.) or equal parts of calcium and magnesium tribasic phosphate (30 gr. of each). Neither of these is as good as the soluble alkalis for the relief of pain, and during the initial phase the addition of sodium bicarbonate can be most useful—e.g., tab. alk. co. effervesc. may be given, or mist. magnesii trisilicatis composita (*N.F.*), which contains 10 gr. (0.65 g.) of magnesium trisilicate, light magnesium carbonate, and sodium bicarbonate.

Belladonna is probably of most value when taken at night, and may stop night pain. Tinct. belladonna, 15–30 min. (0.9–1.8 ml.) may be given, or the dry extract may be combined with phenobarbitone aa ½ gr.; the dose is one to two tablets. Olive oil (½–1 oz.=14–28 ml.) before meals is a useful adjunct, especially in cases of duodenal ulcer.

Special Measures

The underweight patient should be given extra protein "Bemax" (1 oz.=30 g.) is a useful supplement, as it contains 30% protein in addition to the vitamin B complex. Fortified milk feeds at night are most useful—for example:

5 oz. (140 ml.) milk
½ oz. (14 ml.) half-cream dried milk
¼ oz. (20 mg.) "prosol"

Flavour as desired with cocoa, vanilla, or coffee. A milk drip is invaluable if there is severe pain at first, and a milk drip at night is a useful additional therapy for duodenal ulcer. Use a very thin Ryle's tube passed through the nose and give 2 pints (1.1 litres) of milk during the night or 6 pints (3.4 litres) in the 24 hours. Evaporated milk in the proportion of 15 oz. (425 ml.) to 25 oz. (700 ml.) of water may be used. This is more satisfactory than dried milk.

Surgery

There is no hard-and-fast line between medical and surgical treatment, and each case requires individual assessment. Under the age of 45 the chance of death is small, but surgery may be needed to save a man's job rather than his life. If crippling relapses incapacitate him he has earned a partial gastrectomy. Over 45 years there is increasing risk of death from complications if ulcers remain unhealed. If the general condition and the surgical facilities are good there should be no hesitation in operating on the patient who is unable to heal his ulcer or has recurrent complications. Partial gastrectomy is the operation of choice, and its mortality has declined considerably recently with increasing experience of surgeons and the introduction of new anaesthetic techniques and antibiotics. Nevertheless, there is a small mortality and morbidity which must still encourage the practitioner to administer medical treatment thoroughly before surgery is recommended.

Aftercare

The risk of subsequent relapses can be reduced by attention to certain aspects of the patient's life and habits. He must have a clear appreciation of the effect of emotional reactions in predisposing towards or causing further ulceration. Minor environmental difficulties may be more harmful than personal catastrophes. There must be a calm, philosophical outlook and a refusal to allow small troubles to accumulate into a pent-up load of resentment or frustration. If the patient finds himself becoming tense he must be encouraged to take phenobarbitone (½ gr. t.d.s.). The practitioner can assist greatly by encouraging regular consultations, at first every six weeks, then every three months, and finally three times a year. A sympathetic understanding of the difficulties and the advice of an independent observer may greatly help the individual.

The patient should avoid undue fatigue, chilling, and work which involves constant bending; but it is seldom advisable to change the patient's occupation, for this often causes more problems than are solved. Regular hours are highly desirable, and limitation of overtime duties is necessary.

Dietary restriction is probably of value indefinitely, but the most important aspect of feeding is maintaining regular meals without long intervals between them. The patient is well advised to avoid fried foods of all kinds, pastries and suet, pickles and spices, curry, pepper, onions, reheated dishes, coffee, strong tea, and anything which he finds indigestible. Priority milk should be continued, and has proved to be of great value for many patients with a ready tendency to relapse. Alcohol is best omitted for six months and then allowed in strict moderation. Smoking should be restricted, or preferably stopped, but it is legitimate to allow a few cigarettes after meals, unless the patient relapses.

Continued medication with antacids or atropine is not desirable, but the patient should have a supply of phenobarbitone. He should be strongly advised to rest completely at the onset of a relapse and return to the strict ulcer regime, for early treatment may abort an otherwise long and tiresome recurrence.

MEN AND MEDICINE*

BY

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You are entering on your profession at a time when great changes have taken place not only in the practice of medicine but also in the organizational forms under which it is conducted. It is far too soon to pass any verdict on the National Health Service, whether of praise or of blame, but one danger is already apparent—that its financial arrangements may easily tend to draw men away from general practice into so-called specialisms, with results that on the long view may be detrimental to the weal of the patient and the general progress of medicine.

It will be an ill day for the community when the general practitioner degenerates into a filler of forms or an automatic machine dispensing chemical panaceas. In earlier times the specialist usually graduated from the field of general medicine or surgery in which he was accustomed to deal with his patient as a human being set in a particular environment. Now the specialist at the very beginning of his career will be tempted to immure himself in his specialty, and the danger may be not only that the range of his own medical knowledge will be restricted but that he may come to lack understanding of the patient's environment and of the problems that face the general practitioner.

I am aware of the theoretical arguments in support of this trend. They start from the proposition that medicine is a science—i.e., an attempt to make knowledge quantitative—and in their extreme forms they suggest that the best results may be attained by subjecting the patient to the attentions of a series of specialists, each producing his quantitative report with a Grand Co-ordinator at the top who collates their reports and then prescribes the appropriate remedy. This picture, I will concede, is caricature, but it is not an unrecognizable distortion of some things that may be read or heard. The other theory rests on the contention that medicine is an art and that there is no difference in principle between the doctor making up his mind and the judge framing his judgment, the painter building up his picture, or the cook producing a good meal. In each case the practitioner of the art requires to take a total view of the situation, balancing the different elements with a delicate sense of relevancy. It is this intuitive sense of relevancy and balance that makes a judgment—legal, medical, aesthetic, or culinary—and in each case the art is learnt by doing the job and by following the practice of the acknowledged masters. It cannot be disputed that contemporary medicine owes much to the quantitative approach of exact science, but on the other hand it must not be forgotten that many of the great discoveries have come by chance to men who, like Saul, were looking for their father's asses and found a kingdom. Others again, as Sir James Mackenzie was never tired of saying, were due to general practitioners who were capable of using their own observation and clinical nous to some purpose.

Pastoral Medicine

If the practice of medicine is an art rather than a science it is equally true that the patient himself is not a mere natural object to which the techniques of physical science can be universally applied. I think it will be increasingly recognized that man has a spiritual structure which must be respected no less than the physical structure with which it has some kind of relation. It may be that the conditions of modern industrial society are themselves a violation of this essential structure, and that the increase of nervous tension and mental instability and the growing resentment of the industrial proletariat are symptoms of a violation too gross to be palliated by mere adjustments of social mechanism. However that may be, there now devolves upon the doctor in general practice a quasipastoral function which derives from the pathetic and indeed terrifying trust which simple folk repose in him. It is to be feared that the medical course, grossly overloaded as it is admitted to be, is a most inadequate propaedeutic for the discharge of a ministerial function of this kind. It becomes a question whether there should not be a course in pastoral medicine as well as in pastoral theology. Such a course would take the student into deeper waters than can be plumbed by operational techniques and the measuring instruments of the laboratory.

For the great scientific advances of our time have singularly little bearing on the decisions which have to be taken in men's daily lives and which, over a period of time, affect them profoundly for weal or woe. Scientific discovery does much to change the environmental framework within which decisions have to be taken, but the decisions themselves depend on factors that derive from custom and tradition, from poetry and literature, from philosophy and religious belief. This fact, once you perceive and realize it, may well serve to keep you humble. But those are questions that you will have to face in the years that are to come.

*Part of a graduation address given at Aberdeen University, September, 1949.

The American Trudeau Society, medical section of the National Tuberculosis Association, has adopted a report of its Subcommittee on Immunology which recommends that "efforts be continued to perfect and to meet in practice suitable standards for the production of B.C.G. vaccine, and that, when practicable, commercial firms be licensed under the National Institute of Health to produce the vaccine."

WITH WHALES AND SEALS

BY

H. R. LILLIE, B.Sc., M.B., Ch.B.

Surgery and medicine on Arctic or Antarctic expeditions are very different from the routine of practices and hospitals in cities. In lands where icebergs drift quietly by in the summer twilight and the world next day may be one howling gale, you are your own radiologist, pathologist, and theatre sister, and for a second opinion you have the nearest penguin or polar bear. When an operation has to be done, the ship's fifth engineer will probably be first assistant and one of the wireless operators anaesthetist. Then the patient so often gets back to duty in much less time than he would at home, for the air is pure and he knows his mates are waiting for him.

Surgeons and biologists on whaling operations, and those who come in contact with the lesser-known sealing expeditions, soon realize that behind the popular sagas of hardships and bravery in these industries lie killing methods which over the past hundred years have, for excesses of cruelty, been surpassed only by the horrors of fur trapping.

Whaling in the Antarctic

My introduction to the real state of affairs in whaling was in the Antarctic in the 1946–7 season as surgeon with a Scottish whaling fleet of 14 ships, comprising the parent factory ship the size of the *Empress of Australia*, 10 foraging harpoon vessels like squat trawlers, two oil tankers, and a supply ship plying between the mother ship and the United Kingdom during the season. Six hundred men had to be catered for medically. It was a year when the accident toll was heavier than usual, one catching-vessel being lost with only one survivor, and the fleet hospital on board the mother ship was kept in action with such as broken limbs and ribs, eye damage from a tank explosion, and, by the way of variation, injuries to a flenser who fell inside a blue whale's mouth as the carcass was being turned over on deck. Trapped with only his boots sticking out as the jaws came together, he got off with a moderately crushed chest and emphysema from the neck to the waist, but was back on his job in six weeks. In a factory ship crammed from stem to stern with machinery for processing the whales, with little room for men to move around, accidents were to be expected, but mangled feet and hands were very few. In view of the antiquated explosive harpoon still used in the killing, which bursts the whale intestines, a large supply of anti-gas-gangrene serum was taken, but little was required in spite of whales having to be handled at times in a very putrid condition.

A whale-factory cutting-deck, which for space resembles the flight deck of a small aircraft carrier, when in full action is a blood-soaked welter of entrails, massive vertebrae, ribs, jaw bones, and five-ton lumps of red meat being dragged in all directions. The whale being dismembered may have been well over 100 tons in weight, the equivalent of 150 oxen. The surgeon acting as biologist in the pursuit of whale pituitaries, ovaries, pancreas, or thyroids has to find his specimens with the minimum of delay in this battlefield if he is to secure them before they disappear through the deck manholes into the factory cookers below. And if his feet go out from under him on a piece of slippery whale tongue, then the mirth of those seeing him sitting in six inches of blood and entrails is anything but half-hearted.

The ship's hospital equipment was good. There were eight normal beds, two extra isolation cabins for emergency, and an operating theatre equipped for every possibility: a portable *x*-ray plant was a great asset, and, in addition to its use for humans, was used to diagnose damage done to the foot of one of the many king penguins we brought back from South Georgia for the zoos in Britain.

The whaling surgeon is likely to be busy at any time in the day or night throughout the three to four months' active whaling season. During daylight most of his work will be with the factory hands, but at night catching-vessels will come alongside to take on bunkers and stores and get any sick men attended to, for only with very serious cases will they interrupt whaling operations. In addition to accidents there are always the few dental cases requiring fillings or extractions. The fevers also crop up. A week out from home we had a case of scarlet fever on board, and towards the end of the season one of the worst cases of chicken-pox I have seen. During the season the doctor may transfer to the catching-vessels for a few days at a time, keeping in touch with the mother ship and the other catchers by radio-telephone.

The method still used in killing the whales to-day is antiquated and horrible. Since the last war radar, asdic, and even aircraft have been added to the whalers' equipment, in addition to faster catching-vessels, but the sad fact remains that with all these inventions the actual killing with the explosive harpoon is more cruel and economically unsound than was the original iron harpoon at the dawn of the industry hundreds of years ago—more cruel than it would be to a man, for, in a whale, wound shock gives no relief; and economically bad, for the explosive harpoon is the most wasteful weapon possible. The delayed-action explosive head usually bursts the intestines and spreads putrefactive organisms throughout the circulation during the long time taken for the creature to die. Only in the comparatively few cases when the whale is speedily and humanely killed by a harpoon striking a vital spot altogether away from the intestines can satisfactory meat be produced. Only when this primitive explosive harpoon is given up altogether—superseded by a modern humane method such as electrocution—will whale meat ever really come into its own as a valuable food for man.

A whale swimming is a wonderful sight, just the poetry of majestic motion, and to see one of these beautiful creatures pouring blood and gasping along on the surface towing a three-hundred-ton catching-vessel on the end of a harpoon rope is pitiful. Anything up to an hour is the usual time taken for them to die, but time and again it takes two or three hours and three, four, or more harpoons to tear and blast the life out of one of them. In one extreme case I witnessed five hours and nine harpoons were required to kill a female blue whale in advanced pregnancy. These mother whales fight desperately for their lives and those of their babies. I am glad to say research to correct this is at long last going ahead to make the industry one of which we need no longer be ashamed.

Sealing Expedition

Last Christmas brought me to Newfoundland and a base at Twillingate Hospital in Notre Dame Bay, an institution of 130 beds serving an area of 3,000 square miles and presided over by Dr. John Olds, a graduate of Johns Hopkins. There we discussed the plight of the harp seals and what could be done. Like the whales they are helpless against uncontrolled commercial exploitation. The sealing fleet this past spring included 25 ships from Newfoundland, Norway, Canada, and the United States, and one was fitted as an emergency medical ship. Two spring months were spent in the drifting pack with the seals, our little wooden vessel

Codroy with her crew of 43 men at times lying immovably jammed and helpless in a silent world of drifting snow, or on other days with the pack grinding and battering at her sides in a heaving ocean swell. Three ships were lost—one wooden Newfoundlander, from which the crew escaped, was crushed by heavy inshore rafting pack, and two steel Norwegian ships were lost by fire and heavy seas, the crews of both missing.

The conditions of medical work differed from those on the whaling expedition. Other ships of the fleet could not come for medical help, being often frozen fast in the pack and possibly 50 miles away from us. So we treated over our radio transmitter their cases of pneumonia, damaged ribs, and exposure. A mild form of snow blindness was common in men who neglected to wear dark glasses while working in bright weather out on the ice pans. Seal finger, sometimes known as fat finger, is found occasionally in men working with adult seal pelts. Dr. Olds has probably studied this more than anyone. In appearance the lesion is not unlike a tuberculous finger; it is confined to the joint and does not spread, and there is no accompanying lymphangitis. But there is ultimate necrosis and atrophy of the bone, when amputation is the only effective treatment. Investigation by Dr. Olds has shown that in cultures from such fingers, as well as from the seal parts involved, the dominant organism is frequently a staphylococcus, but the bacteriology so far is not conclusive. I found a break in the skin was not a necessary preliminary. Very often the fingers involved are those hooked into the eye-holes in dragging the adult pelts over the ice, and possibly mechanical pressure forces the organisms of the skin through to the deeper layers. I have never seen a similar condition during any whaling operations. In the three typical cases of seal finger brought to me penicillin was injected into the joint area and streptomycin systemically. The two with which I was able to keep in touch cleared up well, but the third patient lost his life by drowning.

Unnecessary Cruelty

As in whaling, unnecessary cruelty is inflicted on the seals. The baby harp seals (whitecoats) born out on the pack ice are helpless, and are taken mainly for their fat; often, instead of killing them properly by a blow on the skull, sealers just daze them with a kick before cutting the little bodies out of the pelts. The mothers climb back on to the ice and wonder why the bleeding carcasses cannot suck from them.

Days I spent with ciné and other cameras strapped around me jumping ice pans; with the ocean swell, footing was not always safe. Many times I subsided into the icy water, when first thought had always to be for saving the cameras, and fortunately only one of three came to grief. On one occasion a harp seal being chased close by was caught between two closing pans and burst like a ripe tomato. I was more careful than ever after that. In this work, often miles away from the ship, I found drinking raw seals' blood and eating the hearts raw to be the most sustaining food of all. It is the Eskimo way.

The shooting of the adult seals later in the season is the worst of all, when any man who thinks he can shoot is allowed to mutilate these creatures. Some seals may die at once, but others shot through the neck or lungs writhe about until they may flop over the edge of the ice to die out of sight. I have seen as many as five seals from one pan disappear leaving bloody trails, while others crippled lie in pools of blood. Three hundred thousand seals are involved annually off Newfoundland alone, and international control is urgent.

Why has nothing been done in the past towards humane whaling and sealing? I find so many of the whalers, sealers, and trappers in their hearts are sick of the practices of these industries, so often glamorized in print. As medical science seems to strive towards the survival of the unfittest, and wider famine areas result from the excessive increase in human numbers, consideration for the other animals that are helping us out now is more than overdue.

Everywhere I have been apart from Arctic and Antarctic expeditions the great cry both in the cities and the remote backwoods is for all-round doctors, with a grip of medicine and surgery as a whole—men to whom the people can come knowing they will be taken care of mentally and physically and not just pushed on to someone else. There are so many vast areas where a Highlands and Islands Medical Service as we knew it in Scotland is an urgent need. But the people living bravely in the outposts of this world will for ever resent any so-called free service. There they rarely complain of their lot. They may be lonely, but the general doctor can do much where the city specialists' ideas cannot meet the requirements. These people have faith in what they are doing, and courage. Working with them you will get back again your faith in the human race.

AUREOMYCIN AND CHLOROMYCETIN

We published (November 19, p. 1171) a memorandum from the Ministry of Health on the subject of "aureomycin" and "chloromycetin." The Department of Health for Scotland has now made the following announcement:

Supplies of aureomycin and chloromycetin are now available for use in Scotland. Owing to the fact that they are scarce and costly their use can be justified only for conditions in which they are likely to be beneficial. Until supplies become more plentiful the Medical Research Council has advised that the use of the drugs should be confined to the following conditions:

Aureomycin.—Suspected cases of ornithosis; proved cases of undulant fever (brucellosis) and lymphogranuloma inguinale; severe cases of atypical pneumonia in which there is good reason to believe that the cause is a virus.

Chloromycetin.—Suspected cases of ornithosis; proved cases of undulant fever (brucellosis), lymphogranuloma inguinale, typhoid fever, paratyphoid fever (severe), salmonella septicaemia.

These categories are under constant review and may be added to from time to time in the light of current expert advice.

All available supplies are being purchased centrally and will be distributed through the following centres:

Region	*Distribution Centre*	*Telephone No.*
Northern	The Medical Superintendent, Raigmore Hospital, Inverness ..	Inverness 681
North-Eastern ..	Dr J. Smith, City Hospital, Aberdeen ..	Aberdeen 2242
Eastern	Dr. Wm. Jamieson, King's Cross Hospital, Dundee	Dundee 85241
South-Eastern ..	The Chief Pharmacist, Western General Hospital, Crewe Road, Edinburgh, 4	Edinburgh 30271
Western	The Chief Pharmacist, Central Pharmaceutical Store, 112, Ingram Street, Glasgow ..	Glasgow Central 9600

Reports of Societies

MUSIC IN PSYCHOLOGICAL MEDICINE

The use of music in psychological medicine was discussed at a meeting of the Section of Psychiatry of the Royal Society of Medicine on December 13, with Dr. W. J. T. KIMBER presiding.

Dr. S. D. MITCHELL said that at his mental hospital, with a colleague, he had been studying the use of music in group therapy in a variety of syndromes. The groups averaged 10 persons, all in-patients, members of both sexes, mainly young and middle-aged adults, generally selected because they liked music and were well enough to carry on a conversation. They met weekly, listened to selections of music, and discussed their reactions. He wanted to see whether the more inhibited were enabled to express themselves better, and whether the less inhibited would have better emotional control. The music was chosen to cater for every taste. Elizabethan music—madrigals and so forth—appeared to be too remote to evoke any emotional reaction. Reactions to the music of the great composers varied:

Mozart.—Mild serenity throughout the group.

Bach.—Some patients were indifferent. Several schizophrenics expressed "cool admiration." One declared that the composer was "balanced." An anxiety neurotic and morphine addict found this music boring; Bach gave her, she said, a feeling of frustration and inferiority.

Beethoven.—Produced outstandingly stimulating effects compared with other classical masters. On listening to the Fifth Symphony a manic-depressive said it was clear that Beethoven had had a conflict and had won through. It made her feel much better to listen to him.

Chopin.—An obsessional neurotic said that the Fourth Prelude affected him personally; a manic-depressive woman had a feeling of personal loss. A young schizophrenic said that Chopin's music burdened her with other people's troubles, and she did not see why this should be.

Wagner.—The *Flying Dutchman* overture evoked very strong personal reactions and led to quarrelling about personal attitudes to the love relationship.

Nineteenth-century realistic music, said Dr. Mitchell, had certain advantages in therapy. It stirred up personal emotional reactions, but it did make for contact with reality. Negative transference was frequently aroused in the personal relationship of group members. A selection from *Cavalleria Rusticana* led to animated discussions on the faithlessness of men and of women.

Schizophrenics showed kinship with Eastern music. The reactions to comic and light music were stereotyped and much like those of normal people. Of Stravinsky's ballet music a morphine addict said that if she had been present at the ballet she would not have been responsible for her behaviour; a paranoiac said that the composer should be shot. The music of Delius affected patients favourably, but some felt it was "like a cold wind." Traditional and folk songs drew the group closely together.

On the whole Dr. Mitchell thought that these preliminary investigations were sufficiently encouraging to justify the further use of music as an accessory in psychological medicine. Even deteriorated patients responded well to music and afterwards talked more freely and sociably.

Reactions of Mental Patients

Dr. E. CUNNINGHAM DAX exhibited a number of paintings made by patients immediately after hearing certain musical compositions. He considered that the therapeutic uses of music were spoken about too loosely. No one had proved statistically that music or any other art had a curative effect on the mentally ill, yet people tended to speak of stimulating or sedative music as one might speak of drugs. He went on to play a gramophone record of a composition by a patient; this consisted of 16 variations on "God rest you merry, gentlemen." He also showed the original notation, which was in part illegible. When these variations were played back to the patient two years later she disowned some of them. He also showed a musical score by a young and distinguished composer who was a schizophrenic. He had decorated it with various emblems, and the notation itself appeared to be schizophrenic in character. Scores by other patients showed decided overactivity.

As to the reactions expressed pictorially after listening to well-known music, Vaughan Williams's "Lark Ascending" appeared notably to increase the colour reactions of the patients, and Schumann's "Pianoforte Quintette" increased the sense of movement. After hearing one piece of music, 13 out of 17 patients immediately depicted scenes of murder, suicide, robbery, train disasters, storms, or dragonflies burning their wings in the fire. Dr. Dax added that at concerts patients seemed to enjoy the voice, especially the soprano, more than instruments. A more disturbed group was greatly upset by the piccolo, but as yet no patient had had a fit during a concert.

In the ensuing discussion some interesting experiences were exchanged. One psychiatrist who had trained an orchestra of mental patients said that it had opened to them a new dimension. Some of the patients even simulated the mannerisms of professional musicians.

Dr. WILLIAM SARGANT spoke of experiences in the Southern States of America where among the negro populations music was essential to church worship, and church worship was intimately bound up with psychiatric healing. He had seen what amounted to shock therapy produced by musical noise and excitement. He referred also to the history of St. Vitus's dance, which, like the tarantella in Italy, was a dance used in the Middle Ages for working a hysterical malady out of the system

Dr. HENRY YELLOWLEES put in "a humble plea for clear thinking." The only point the openers had made was that music provided a means of emotional expression for the patient. Various diagnostic labels had been placed on patients, but surely inhibited schizophrenics and the like would all react in some way or other to any stimulus, and there was no evidence that there was any validity whatever to be attached to the reactions which occurred after the playing of certain pieces of music.

Jung would have given these patients a string of simple words, and surely they would have shown just as varied and sometimes startling reactions as they had done to musical compositions. Moreover, all the three schools of psychological medicine had laid stress on the point that what mattered was the individual psychology of the patient, his individual complexes and outlook, yet now for various reasons patients were treated in groups, and we had "social psychiatry, social psychology, and social everything else." Here inferences were being drawn from the reactions of a group of psychotic or neurotic or psychopathic patients, all mixed up together, who, after a certain piece of music had been played to them, were said to be more group conscious.

Dr. MITCHELL, in reply, said that he thought those who had experience of what had been done would agree that there were advantages, both for observation and treatment, in the musical group method.

MANAGEMENT OF THE ANAEMIAS

At a meeting of the Liverpool Medical Institution on December 1, with the president, Professor Charles Wells, in the chair, Dr. F. J. ZACHARIAS read a paper on "The Management of the Anaemias."

Dr. Zacharias said that the general practitioner had to sort out those cases he could treat himself and those that required investigation in hospital. Domiciliary management was adequate for a large number of cases, those in which the anaemia was doubtful or slight and whose symptoms did not suggest serious organic disease, and also those in which the history and signs suggested an iron-deficiency state but with no likelihood of persistent blood loss. Access to the laboratory for every practitioner was essential, and the importance of full co-operation between the general practitioner and the pathologist was stressed.

The speaker suggested that in many hospitals far too little was done in the out-patient clinic. It was his practice to have a full blood count and a histamine test-meal undertaken, and to perform a sternal puncture on out-patients in a single morning, as a routine in all cases of anaemia requiring these investigations.

The problems of investigation in the less straightforward cases were discussed with particular reference to pernicious anaemia. It was relatively common to mistake macrocytic anaemias that did not respond to liver therapy for cases of pernicious anaemia. He recalled a series of such cases seen in the last three years, including cases of haemolytic anaemia, refractory normoblastic anaemia, aleukaemic leukaemia, and certain cases of chronic hypoplastic anaemia.

The less common error of mistaking pernicious anaemia for other conditions was then discussed, and three cases were described presenting in young people with organic heart disease; in each case bacterial endocarditis had been diagnosed. In one of these cases the peripheral blood was at first not significantly macrocytic, and only a full investigation revealed the true nature of the anaemia.

Dr. Zacharias stressed repeatedly the importance of the axiom "Investigate before you treat," and showed that failure to adhere to this principle was responsible for much confusion and delay in diagnosis and for many errors in treatment. While the great majority of cases of pernicious anaemia could be diagnosed by an intelligent assessment of the clinical findings together with examination of the peripheral blood, mistakes would be made occasionally if these cases were not further investigated by means of the histamine test-meal, marrow puncture, and assessment of the reticulocyte response to treatment. Since the outlook was usually very grave in the cases misdiagnosed as pernicious anaemia, this error was inexcusable, for with proper investigation, before and not after treatment, it could be avoided.

Blood Transfusion

Dr. D. LEHANE read a short paper on blood transfusion in the treatment of anaemia. He said that blood transfusion, properly administered with due regard to the indications, gave excellent results in the treatment of anaemia. The main purpose of transfusion was to increase the number of circulating red blood cells. This was necessary when there was complete failure of red blood cell production, when the anaemia was so severe that the patient's life was in danger, or as a pre-operative measure.

The indications for transfusion in the various types of anaemia were briefly discussed. Cases of chronic hypochromic anaemia usually responded satisfactorily to iron therapy, and transfusion was not necessary except in the most severe cases.

Liver therapy was usually adequate for cases of pernicious anaemia, but blood transfusion was of considerable value when anoxia appeared.

Patients suffering from the macrocytic anaemia of pregnancy could be maintained in good health throughout pregnancy by transfusion.

In cases of aplastic and hypoplastic anaemia blood transfusion was the only measure by means of which a satisfactory haemoglobin level could be maintained; it was possible to prolong life for considerable periods by repeated transfusions. Two patients who had had long remissions had been given 108 and 58 transfusions respectively, and were in good health after three and a half and two years.

Transfusion was of little value in the anaemia of leukaemia except in the preparation of the patient for other therapy. In his experience treatment by massive replacement transfusion had not been very helpful in cases of acute leukaemia.

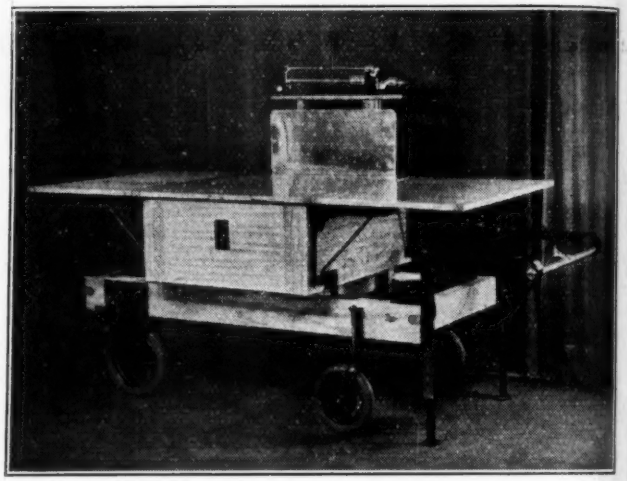
Generally speaking, single transfusions of not more than 500 ml. should be given on alternate days by the slow drip method. Where there was any possibility of myocardial insufficiency great caution was required, and the rate of transfusion should be 10–15 drops per minute, otherwise there might be grave danger of overloading the circulation. Deaths from pulmonary oedema and cardiac failure were by far the commonest fatal transfusion reactions in cases of chronic anaemia.

Preparations and Appliances

WARD WEIGHING-MACHINE FOR RECUMBENT PATIENTS

Dr. F. HARWOOD STEVENSON, Consulting Physician to the Royal National Orthopaedic Hospital, writes: The weighing-machine illustrated here has been made for the Royal National Orthopaedic Hospital, Country Branch, Stanmore, and is proving most efficient and valuable in use.

There are in the hospital about a hundred cases of orthopaedic tuberculosis. It has long been felt that these and certain other long-term cases should be weighed regularly, and this machine has been constructed so that the patient can be laid recumbent and, if necessary, weighed in a plaster bed or on a frame. All frames and plaster beds are now weighed before the patient goes on to them. The machine weighs up to a maximum of 24 st. (107 kg.) by 2-oz. (57-mg.) divisions, and the total capacity is shown on graduated indexes over which pass sliding poises, there being no loose weights whatever. The indexes are placed so that they can be read by a nurse of average height while standing, and are at the centre of the machine. The weighing mechanism is mounted on a trolley which is fitted with four sorbo-rubber-tyred wheels, two of which swivel to enable the machine to be manœuvred in a



very small space. The stretcher, or platform, is so designed that it cannot tip, and when not in use the ends fold over the centre of the machine, thus reducing the size and making it more convenient to move about. At one end of the trolley is a folding push-bar which acts as a convenient means of pushing or pulling.

When the machine is manœuvred into position beside the patient's bed the handle-bar is pulled down, thereby raising the two back swivel wheels off the ground and lowering two feet, or supports. The front wheels can be secured by a hand-brake, and the machine is then completely stable. All knife-edges and bearings in the weighing mechanism are of hardened steel, thus ensuring the continued sensitivity and accuracy of the machine.

It will be noted from the above description that the whole outfit is fully mobile, and as it is constructed largely of wood the weight is kept to a minimum. It can be handled quite easily by one nurse.

The machine is made by H. Fereday and Sons, Ltd., 39-54 Shaftesbury Street, London, N.1, and the price is £50.

A pamphlet entitled "Cerebral Palsy" has been prepared by Queen Mary's Hospital for Children, Carshalton, Surrey, giving notes for physiotherapists on infantile cerebral palsy. It may be obtained for 1s. from the hospital.

Correspondence

Morphine for the Injured

SIR,—Mr. Wilson Hey (November 5, p. 1056) has done a great service to the profession and the country in drawing attention to the restrictions in the use of morphine which are the cause of unnecessary suffering.

Recently a committee on ambulance equipment, of which I was chairman, was informed that while an ambulance with trained attendants and equipment, including morphine and syringe, usually arrived at the seat of an accident promptly, no morphine could be given until a doctor was obtained, and that there was generally appreciable and sometimes prolonged delay before the services of a doctor were available. The committee made recommendations to the effect that with certain safeguards the law should be altered to permit of trained attendants giving morphine under such circumstances.

During my service in Palestine in 1938, when British troops were scattered in small groups in many villages, R.A.M.C. nursing orderlies were provided with morphine and instructed in the indications for its use, and nothing but good resulted. During the war many units at home and abroad were provided with "tubunic" ampoules of morphine for use when no doctor was available.

Surely the time has come to revise the rules so that they do not stand in the way of relief of pain in emergency.—I am, etc..

Government House, Bermuda. ALEX. HOOD.

Sudden Obesity and Psychological Trauma

SIR,—I was extremely pleased that the weight of Dr. H. J. Shorvon and Dr. John S. Richardson's authority should be brought to the support of a concept which I have urged for many years. There are two points, however, in their paper (October 29, p. 951) which I feel might receive a slightly different stress. In the first place, although they quote the work of Verney on the action of the antidiuretic hormone of the posterior pituitary in producing water retention during emotional stress, they do not in their discussion give it the weight which I feel that it deserves. I have not had the opportunity of studying this subject from any but a strictly clinical point of view, but I am convinced that in those patients who develop "obesity" suddenly during emotional stress the water retention is of far greater importance than the fat retention. I have even wondered at times whether any true fat retention in fact occurs. The changes in weight are often so sudden that it is difficult to account for them by fat deposition. Pitting oedema, best detected along the shins, is nearly always obvious and occasionally severe.

My second point is a corollary to this. The authors in their discussion of their case lay great stress on the excellent researches of Bruch. No one, of course, can deny that "oral gratification may allay anxiety or conflicts," or, as some of us would put it, that food is a comforting thing. I have no doubt that many people who are unhappy over-eat and that this is particularly true of children. Nevertheless the case of my own which Dr. Shorvon and Dr. Richardson quote brings out an important point about this syndrome which is too little stressed. My patient lost weight only slightly on a diet of 1,000 calories under close observation while her anxiety continued. On a diet which must have had at least twice this calorie value, and perhaps three times, she lost weight very rapidly when once her anxiety had ceased.

The increase in weight due to psychological trauma is not invariably associated with an increase in appetite or with an increase in calorie intake. This apparent contradiction of the law of the conservation of energy can only be explained on the assumption that the major part of the increase is due, as it is in Verney's animals, to water retention rather than to fat deposition. On this hypothesis it is easy to understand why so many of these patients fail to lose weight on a diet of restricted calorie value while they lose weight rapidly on a diet which restricts their intake of carbohydrate, fluid, and salt, leaving their calorie intake more or less unaffected. It explains also why diuretics are often a necessary part of the treatment.

Dr. Ian Martin-Scott (November 19, p. 1178) raises the question of whether seborrhoeic dermatitis is a related phenomenon. I cannot bring forward any statistical observations. My impression is that although seborrhoea is commonly associated with psychogenic obesity it is probably no more common amongst the obese than amongst the slim. Nevertheless it is a very noticeable fact that when seborrhoea is associated with obesity it is immensely improved by the dehydrating regime.—I am, etc..

London, W.1. RAYMOND GREENE.

SIR,—We were much interested by the question asked by Dr. Ian Martin-Scott (November 19, p. 1178). We have considered our cases in the light of this question but have found no evidence of excessive secretion of sebum as a constant or even frequent feature. It was notable that many of our patients had particularly fine clear skins such as are not infrequently seen in obese subjects.

Dr. Martin-Scott presumed that the loss of weight in our cases was due to fluid loss. This we feel is most certainly true when the loss is rapid, but we have also found that our patients had better control of their appetites after the treatment we were giving.—We are, etc.,

London, W.1. H. J. SHORVON.
J. S. RICHARDSON.

Amphetamine Euphoria

SIR,—The case recently reported in the press, when a young woman committed shop-lifting offences apparently under the influence of amphetamine euphoria, is perhaps of more than passing interest. In the circumstances it was not unexpected that the magistrate declined to accept the suggestion that the drug had any effect on the girl's behaviour, and as there is little reference in the literature to the association of amphetamine ingestion with delinquency the facts should be placed on record.

The patient, a young woman of 24, asked for medical advice concerning her varicose veins. In relation to these the principal causative factor appeared to be her excessive weight, and as she slept long hours and was rather lethargic and apathetic generally amphetamine 5 mg. three times daily was prescribed.

It was on the third day after beginning the drug treatment that the offences took place. As she was going out for the afternoon she decided on her own account to take two tablets at lunch-time. As she was not hungry and thought that fasting would help her to lose weight she had eaten nothing since breakfast. Her memory of events during the afternoon is vague, but it appears that, as arranged, she met her sister, who after a time noted her strange excitable mood and tried to persuade her to return home. Five articles were stolen in three different shops, and it was only in the last shop that the sister became definitely aware that something had been stolen and tried in vain to get her to replace it. Shortly after she was detained by the stores' detective, who in giving evidence testified that the girl laughed and treated the matter as a joke and did not appear in a normal mood.

There was nothing to suggest psychological stress, nor had there been any indication of delinquent characteristics or of maladjustment of any kind. On the day before the offence she had appeared somewhat jovial and irresponsible, but not to an extent to draw particular attention. She had slept fitfully, unlike her normal routine, had jumped out of bed easily in the morning, and stated that at midnight "she felt like going off to London for a night out." At the court hearing it was reported that Dr. Russell Davies had found, during an investigation in the Services, that women were more liable than men to show a tendency to irresponsible behaviour, without normal control or insight, after amphetamine medication. It would be interesting to know if there have been other cases of this kind.—We are, etc.,

London, E. ALAN MABERLY.
C. V. BLOOM.

Experimental Ascorbic Acid Deficiency

SIR,—I am most interested in the medical memorandum by Dr. J. D. Andrew on experimental ascorbic acid deficiency (December 3, p. 1273), especially in the observation that he had oedema of the ankles apparently due to ascorbic acid deficiency. Out of the mass of literature on the subject I quote Duran-Reynals,[1] who states that "the studies of Chambers[2] and Zweifach[3] have defined the cement present between the endothelial cells of blood capillaries as a sticky, argyrophilic matter, continuously secreted by the cells themselves, and conditioned by calcium salts and the *p*H level. The cement behaves as if it were a salt of calcium, is digested by trypsin, and is not laid down in the absence of vitamin C."—I am, etc.,

Liverpool, 3. J. G. ALEXANDER.

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[1] *Bact. Rev.*, 1942, **6**, 197.
[2] *J. cell. comp. Physiol.*, 1940, **15**, 255.
[3] *Cold Spring Harbor Symposia on Quantitative Biology*, 1948, **8**, 216.

Visceral Actinomycosis

SIR,—Mr. V. Zachary Cope, in his Bradshaw Lecture on "Visceral Actinomycosis" (December 10, p. 1311), brings to our notice the Cinderella of infections. He is to be congratulated on his clear exposition of the disease, its symptoms, diagnosis, and treatment, and in stressing the need to bear this disease in mind at all times. It is only by being alive to the fact that this disease is not a rarity that it will be diagnosed and the necessary treatment carried out. Both surgeon and bacteriologist have a responsibility in the diagnosis of this condition—the surgeon to include it in his differential diagnosis and to provide a suitable specimen for bacteriological examination, the bacteriologist to search for and isolate the causative organism.

To isolate *A. israeli* and grow it in pure culture is often a difficult task for the bacteriologist. If a small quantity of pus arrives on a swab then the job of the bacteriologist becomes much more difficult, if not wellnigh impossible, unless the "sulphur granules" are abundant. Pus obtained from any lesion which is suspected of being actinomycotic in origin should be sent to the laboratory in a sterile tube and not on a swab. The more material that is sent to the bacteriologist the better chance he has of finding the organism.

Although much has been learned about this disease since the first case was described 70 years ago, there are still many gaps in our knowledge. The fact that *A. israeli* could be isolated from the teeth and tonsillar crypts of people who showed no signs of actinomycosis was an important contribution to our knowledge of the disease, as was the fact that the disease was often associated with dental caries. It has long been recognized that trauma frequently precipitates the onset of the condition. These three factors—actinomycetes in the mouth, dental caries, and trauma—must often be present in the mouth. It may be that other factors are required before *A. israeli* can establish itself in the tissues. It is probable that actinomycosis is a commoner disease than we realize, only a small proportion of the actual cases being diagnosed.

The figures of the incidence of actinomycosis in this country were given in a discussion at the Royal Society of Medicine in 1930 by Cope.[1] In 11 hospitals in England the average number of cases per year varied from 1 to 2.5. In two of the largest Scottish hospitals there had occurred only five cases in ten years and eight cases in nine years respectively. Recently a survey has been carried out of the cases of actinomycosis which have occurred in the North-east of Scotland (the results of which it is hoped to publish shortly), and it would appear from this that the incidence of actinomycosis, at least in this area, is much greater than the figures quoted above. This survey is part of an investigation the results of which it is hoped will provide figures of the incidence of actinomycosis in Scotland.—I am, etc.,

Aberdeen. I. A. PORTER.

REFERENCE

[1] *Proc. R. Soc. Med.*, 1930, **23**, 866.

Treatment of Cutaneous Anthrax

SIR,—With reference to recent correspondence on anthrax (October 15, p. 875, and December 3, p. 1296) the following fatal case of anthrax might be of interest.

A Slovak peasant of 50 cut a finger of his left hand while handling some raw meat. Soon his hand became swollen, and his general condition deteriorated so rapidly that on about the third day of his illness he had to be transferred to a hospital. On admission he was a very ill man, semi-comatose and running a temperature of 104° F. (40° C.). He died about 24 hours after admission, receiving symptomatic treatment only.

The most important necropsy findings were: (1) Left arm oedematous. (2) Lymph glands of left arm, left axillary, and cervical glands enlarged and haemorrhagic. (3) Spleen enlarged, soft, septic. (4) Haemorrhagic exudate in pleural cavities and haemorrhagic bronchopneumonia of both lungs. (5) Haemorrhagic leptomeningitis; the thickened meninges were covered with a thick layer of brown-red haemorrhagic exudate. Direct smears from the meninges showed numerous anthrax bacilli, which were grown from cultures from the organs also.

This case, an example of the fulminating type of anthrax giving rise to septicaemia and haemorrhagic leptomeningitis, did not receive penicillin. However, several cases of malignant pustule of the arms and face responded well to treatment with penicillin.—I am, etc.,

London, W.C.1. I. FRIEDMANN.

Antihistamine Drugs and Sea-sickness

SIR,—It is a matter of some difficulty for the ship's surgeon to assess the many and varied remedies for this distressing complaint, and the reasons are not far to seek. The passenger usually consults one after vomiting for 24–36 hours, and this often coincides with the end of the bad weather. So whether it be the passenger finding his sea-legs, the weather subsiding, or the efficacy of the remedy prescribed which causes his vomiting to cease is hard to determine. One must remember, too, that one only sees the failures and not the successes of the self-medicated travelling public.

During the war a considerable amount of research work was undertaken to find a remedy for sea-sickness, but in the end hyoscine by itself or combined with some other drug was found to be the best antidote. In fact one might say that until a year ago hyoscine was the sheet-anchor in the treatment of sea-sickness.

The first report on "dramamine" (see leading article in the *British Medical Journal*. May 14, p. 855) seemed almost too good to be true, though it should be noted that quite a considerable proportion of the controls fared quite well on the placebo given, stressing the psychological factor, which is very considerable in this complaint. I have treated a considerable number of cases with dramamine and its Canadian equivalent "gravol" during the summer months when the weather was not too bad and have been very favourably impressed, though my results were not as good as those published by the Americans.[1] However, any antidote for sea-sickness given by the mouth presupposes that the patient will retain it, and in their inability to do so probably lies most of my failures.

The first aim of the surgeon in treating sea-sickness is to stop the vomiting, the second to alleviate the accompanying dehydration. In order to accomplish this I consider it is of cardinal importance to commence medication per rectum. The weather this autumn on the North Atlantic has been very favourable to an extensive trial of initial rectal therapy. The last two voyages westbound found us in a whole gale for three days which means considerable pitching. In most cases medication had commenced 24–48 hours before the storm subsided, an important point in assessing the results. One hundred cases of severe sea-sickness were treated, and below is given the routine and the results.

Patients were kept in bed for two days. Initially one "neoanergan" suppository (150 mg.) was given per rectum, and a half-hour later the patient was encouraged to commence slowly drinking either water, ginger ale, or soda water, aiming at an intake of four to five pints (2.25 to 2.8 litres) during the following 24 hours. On the second day light solid diet was allowed, and the fluid intake was maintained as during the previous 24 hours. On the third day the

patient was encouraged to get up. Eight hours after the initial suppository a tablet of neoantergan (100 mg.) was administered, and on the second day this was repeated at 8 a.m. and a tablet of "phenergan" (25 mg.) was given at 6 p.m. It was unusual to have to carry on treatment for more than three days. In children the same routine was followed, aiming at a fluid intake of 2 to 3 pints (1.1–1.7 litres) of fluid in the first 24 hours. Initially a neoantergan suppository (50 mg.) was given, followed by pulv. neoantergan (25 mg.) three times a day.

Out of 100 consecutive cases of severe sea-sickness treated in this way only two vomited after the first suppository (one being a foreigner whose language I could not speak, and whether or no she followed my directions I cannot tell). The average duration of vomiting prior to medication was 36 hours. Of the 100 passengers treated 80% were females, 20% males. Of these, 20% sought advice following the failure of hyoscine medication, and 7% following failure to retain dramamine tablets. Apart from some drowsiness, I came across no complications.

It is heartening to know that when one first sees a case of severe sea-sickness one can say with almost complete assurance that the patient will vomit no more.—I am, etc.,

Liverpool. F. K. BEAUMONT.

REFERENCE

1 Gay, L. N., and Carliner, P. E., *Bull. Johns Hopk. Hosp.*, 1949, **84**, 470.

Chilblains

SIR,—Dr. J. T. Ingram's excellent article (December 3, p. 1248) on this subject ends by recommending that the physical factors concerned should be explained to the patient. As I have not yet heard or read of a satisfactory explanation, or indeed met anyone who has, I hope you will allow me to give my own as briefly as I can.

1. Chilblains are found usually on such sites as the fingers, toes, and ears. These regions do not contain any intrinsic source of heat. Any animal warmth that they possess is derived from warm arterial blood.

2. The arteries supplying these parts lie to some extent of their course close to the skin surface and are subject to cooling in certain conditions.

3. Heat produced in the body by metabolic processes is largely dissipated by radiation and evaporation from the skin, the hands and feet being especially important in this connexion. It has been shown that a slight rise in body temperature will increase the flow of blood to the hand by 100%.

4. If the body generally is cooled arterial supply to skin, hands, and feet is cut down. Where arteries themselves are exposed to cooling this is bound to result in the blood contained in them being reduced to a lower temperature still.

5. Vascular endothelium being sensitive to cold, the next stage is a spasm of the arterioles supplying the chilblain areas, and ischaemia results—cf., dead fingers after a swim in cold water.

6. So far no great harm has resulted, as tissue metabolism is also arrested by the lowered temperature of the chilblain area. If the subject is so unwise as to warm the part before warming himself the local metabolism will begin before the circulation has resumed. *Hinc illae lacrimae* (meaning, here come chilblains).

As to prevention, it should be clear that groins, knees, ankles, axillae, elbows, and wrists need to be kept warm in cold weather, Wrapping up hands and feet cannot possibly help if arterial blood is already cold when it gets there. If the ears are affected a warm high collar would help. Incidentally, any protective clothing of this sort must be kept dry. A wet anklet is worse than useless. Any measures calculated to increase metabolism should help, particularly an increased calorie intake. The rarity of chilblains in North America may be in part due to better nutrition.

Regarding treatment, the calcium theory is most interesting. Has anyone ever been cured of chilblains by taking calcium? Does anyone know how the idea started? It is plain enough that a prolonged course of treatment started in March ought to give results by July, at least in this country, by any method, but why calcium? And, I might add, why calcinosis as a sequel of chilblains?

There is one way of aborting chilblains in the itching stage that can be depended on. The patient puts the affected part under a cold-water tap until the part becomes numb, then rubs vigorously with a dry rough towel until the circulation returns. It is essential for the patient to do the work himself and thus get warm. Personal experience of the method has always been quite successful. The last time tried would be about 1934. I am glad to say I have not had chilblains since.—I am, etc.,

Shipley, Yorks. HENRY S. RUSSELL.

The Natural History of Asthma

SIR,—I had felt the same disappointment as Dr. D. H. Irwin (December 10, p. 1354) at the absence of adequate reference to psychogenic factors in asthma in the article by Drs. Elsie O. Williams and G E. O. Williams (October 22, p. 897). One interesting point which Dr. Irwin raises is the "growing out" of the condition which seems to happen round about the age of early puberty. This tendency, of which, so far as I know, there is no statistical demonstration, renders it difficult to assess results of treatment in later childhood, but in my experience residential open-air-school treatment for a period of about two years has very good results and often breaks down the anxiety-ridden cycle at home in the most effective manner.

With younger children re-education of the mother, as mentioned by Dr. Irwin, should be an essential adjunct of any treatment. Finally, a demonstration of its psychic nature is given by the favourable effect of hypnotic treatment in adults. It is possible not only to relieve the nervous spasm during an acute attack but also to obtain extended amelioration by including this particular technique in the therapeutic approach.—I am, etc.,

Edgbaston, Birmingham. C. BURNS.

The Uses of Streptomycin

SIR,—Your leading article (November 12, p. 1098) on the uses of streptomycin was well timed and informative. Like Dr. Eric Frankel (November 26, p. 1229), however, I find reason to disagree with the statement that the drug is useless in the treatment of ulcerative colitis. Realizing quite well that one or even two swallows do not make a summer, nevertheless they do make one think that others may be knocking around if we look for them.

In October, 1948, a female patient aged 37 was referred to me for hospital treatment. There was a history of the passing of blood and mucus per rectum for some weeks prior to admission, with rapid weight loss and pyrexia. Over the previous six months two similar but shorter attacks each lasting about one week had occurred.

On admission the patient was nervous and depressed. Her general condition was poor. Temperature varied between 100°–103° F. (37.8°–39.4° C.). Tenderness was present over the descending colon, and stools (10–20 in 24 hours) consisted of blood, pus, and mucus. Barium enema revealed a straight, narrow colon, and sigmoidoscopy the typical changes of colitis with ulceration. *Proteus morganii* was isolated from the stools on culture.

Full courses of penicillin and "sulphasuxidine" together with sedatives, low-residue diet, etc., failed to influence the condition over the next two weeks. Local treatment with a tannic-acid solution was reluctantly tried, still without any improvement.

In view of its reputation with Gram-negative organisms it was then decided to try the effect of streptomycin. For seven days the patient received 0.5 g. thrice daily intramuscularly, together with 0.5 g. in 8 oz. (230 ml.) normal saline per rectum daily. On the third day the temperature settled and the number of stools diminished rapidly, and on the ninth day from the installation of streptomycin therapy she passed one normal stool free from blood, pus, and mucus, and culture was negative. At this stage and for the next three weeks transfusions of a half-pint (570 ml.) of blood were given twice weekly to combat a moderately severe secondary anaemia.

Having remained well for four weeks, the patient's temperature rose to 101° F. (38.3° C.), and on the following day she passed ten stools containing blood and mucus. Streptomycin was immediately administered on similar lines as before, and on the third day the condition cleared quite suddenly. This time a total of 8 g. was given. Stool culture at the beginning of relapse was negative.

The patient's progress from now on was an uninterrupted recovery; and prior to discharge, after hospital treatment for 16 weeks, sigmoidoscopy revealed a normal rectum and sigmoid colon, though the radiological picture was substantially unchanged. She has remained well and free from symptoms since, a period of ten months.

It is interesting to note that in this case there was a history of a severe attack of epidemic diarrhoea three years previously.

A psychological background was added by the birth, ten months after this attack, of a mentally defective (mongol) child, a factor which profoundly affected the patient's outlook since.

These points are interesting in view of the diverse views of the aetiology of ulcerative colitis. Perhaps there is a little of truth in both the psychosomatic and infective schools of thought, and more often than we have realized the colon may have been the recipient of both types of trauma. Intestinal infection and psychosomatic stress are both common, and thus the comparative rarity of ulcerative colitis may be explained by the necessity for coincidence.

In conclusion, may I suggest that cases such as the above and Dr. Frankel's indicate that absolute and dogmatic statements regarding the use of streptomycin in ulcerative colitis may yet prove premature. The danger of such an attitude towards comparatively new forms of therapy has recently been rather forcibly demonstrated in Ireland, where streptomycin has been controlled on the advice of the Medical Research Council, and gastro-intestinal infections are not even mentioned in the schedule of diseases in which permission to use the drug will be granted.—I am, etc.,

Dublin WILLIAM F. O'DWYER

An Unusual Murmur

SIR,—The unusual murmur described by Dr. F. A. Ward (December 10, p. 1353) with the accompanying case history suggests the diagnosis of a small spontaneous pneumothorax. I myself suffered from recurrent spontaneous pneumothoraces a few years ago, and during an attack I often heard and felt the clicks described by Dr. Ward (known in the textbooks as aortic or systolic clicks).

My own personal experience indicates that the systolic clicks are influenced by posture and to a lesser extent by respiration. With alteration of posture, often very slight, they could be made to appear or disappear at will. This probably accounts for the sudden disappearance and reappearance of the clicks in Dr. Ward's case. It was also my experience that the clicks are more pronounced the smaller the pneumothorax.

It seems probable, therefore, that in Dr. Ward's case there was present a small pneumothorax, possibly localized by adhesions, which did not show up on the radiographs.—I am, etc.,

Ryton-on-Tyne, Co. Durham P. H. DICKINSON.

Splenic Puncture

SIR,—I was particularly interested in Dr. Emanuel Tuckman's reference (November 12, p. 1112) to the increasing employment of splenic puncture as a diagnostic measure in blood diseases. Thirteen years ago, in describing the technique of this puncture, I wrote[1]:

> "In the investigation of the pathological processes in blood and other diseases in which splenic enlargement is a prominent symptom, the possibilities of spleen puncture have not been fully explored . . . and it seems certain that useful information regarding the processes of blood-cell destruction might be obtained from the blood taken directly from the sinusoidal spaces in the spleen."

I am in entire agreement with Dr. Tuckman's statements on both the relative safety of splenic puncture and on its greater value in the diagnosis of kala-azar. I also agree that the safety of the operation depends to a great extent on the speed with which it is done. However, I was not impressed with his technique for spleen puncture. I have no doubt that it is much simpler than it sounds. I wonder whether Dr. Tuckman has tried the method described in the paper referred to above. This certainly needs a special syringe attachment, but it is one that can be made very easily by any local tinker. This attachment gives the operator complete control of the syringe with one hand and leaves the other hand free to grasp the spleen.

I could not quite see why Dr. Tuckman claimed that his method made one independent of the patient's co-operation. With my attachment, however, it is possible to do a spleen puncture on a screaming struggling child: all the help that is needed is for someone to keep the child's hands off the syringe. With a firm grasp of his spleen one is quite indifferent to the child's gyrations around this central point. The needle is in the spleen for only a fraction of a second, so that danger of damage to the capsule is reduced to a minimum.

I have used this syringe attachment for twenty-odd years in over 6,000 splenic punctures in kala-azar and in a variety of blood diseases, without fatalities or any serious ill effects, and I now do not care to do the operation without it. If it is true that splenic puncture is becoming more popular among haematologists, I would draw their attention to this simple attachment.—I am, etc.,

London, W.1. L. EVERARD NAPIER.

REFERENCE

1 *Lancet*, 1936, **2**, 126.

Hyaluronidase and Bee-sting Sensitivity

SIR,—In reply to the letter by Drs. W. R. S. Panckridge and C. Q. Henriques on the subject of angioneurotic oedema caused by a wasp-sting (December 10, p. 1354), I wish to make the following comment arising out of observations on two cases of bee-sting sensitivity.

The exquisite degree of sensitivity seen in cases of bee-sting is evident from the severe and on occasion fatal reactions recorded in the literature and in the press. There is evidence that this sensitivity is of an allergic character and is based on sensitization following previous bee-stings. The rapidity of development and widespread severity of the reaction are of the highest order. Among the ordinarily encountered parallels is that seen in cases receiving pollen-hyposensitization therapy, and even here the reaction is rarely as acute or as severe.

The likeliest mechanism for these severe reactions may be (1) a very high degree of sensitivity, as seen by the vigorous skin reactions obtained with testing, or (2) the possibility of accidental intravenous administration of the allergen. The latter is unlikely, though possible even in the case of bee-stings. The fact that bee venom contains hyaluronidase suggests an alternative mechanism. The hyaluronidase could facilitate the rapid and massive absorption of the antigen and could therefore account for the acute and severe generalized reaction.

The two cases of bee-sting sensitivity which were investigated and treated were two members of the South African police force. Their histories varied only in degree. In the one case there were two incidents of almost immediate unconsciousness lasting up to 1½ hours, followed by severe generalized oedema and respiratory distress. The second case, while not so severe, was prostrated with extensive angioneurotic oedema and severe abdominal pains.

Scratch tests were carried out with (1) a bee-venom extract prepared commercially for the treatment of rheumatoid arthritis; (2) bee body protein extracted with carbol saline after the sting and venom had been carefully removed; (3) a drop of honey placed on the skin. The more severe case gave strong positive reactions with all three test materials, while the other did not react to being scratched through the honey. The antigen, therefore, is contained in the bee protein, not solely in the venom. This observation has been confirmed previously by other workers. Both patients responded well clinically to hyposensitization with a bee protein extract prepared by the South African Institute for Medical Research. The response was assessed by the increasing tolerance of the skin to larger doses of the injection material. As emergency measures, the patients were instructed to carry with them a syringe, adrenaline for injection, tablets of ephedrine and of "benadryl" (oral adrenaline, such as "neo-epinine," would appear to hold out the advantages of easier application and portability). When last seen neither had been exposed to the crucial test of being stung again, though it is reasonable to expect that benefit may have accrued from the treatment.

It is suggested, therefore, that the anaphylactic-like response to bee-sting is due to (1) a high degree of sensitivity to bee protein following on previous sensitization, and (2) the adiuvant effect of hyaluronidase in the bee venom; this could facilitate and make more complete the rapid absorption of the antigen.—I am, etc.,

London, W.C.1. J. PEPYS.

Librarians in Children's Wards

SIR,—At a recent conference on "The Librarian in the Children's Ward" held by the Guild of Hospital Librarians on November 9 the audience was surprised to learn that at several hospitals, including large and well-known establishments, librarians were not allowed into the children's wards at all. The opposition, so far as we could gather, comes mainly from the nursing staff, and the reason given is usually "infection." It is not clear whether the librarian or her books are held to be the conveyers of disease, but in any case we respectfully take leave to doubt whether the objection is a reasonable one. If it were valid it would surely be applicable to all children's wards, which is not found to be the case. Where the librarian is welcomed, difficulties about infection traceable to her presence or to the distribution of books do not arise in practice.

It also emerged at the conference that where the teacher acts as children's librarian the books are sometimes locked up at the beginning of the school holidays and the children are deprived of this solace just when they need it most. A few old books left for the nurses to distribute do not in the least meet their wants.

Do these defects in hospital library service really matter? The attention now being paid to the psychological effect of hospital admission on children has shown how bored and frightened and home-sick they can be behind a mask of docility. It seems strange that the best and cheapest means of comfort, occupation, and mental stimulation—a good supply of suitable books—is still not being fully utilized.—We are, etc.,

JOHN FOSDYKE,
President.
LETITIA FAIRFIELD.
Chairman.
JOAN CLOKE,
Secretary.
Guild of Hospital Librarians.

London, S.W.3.

POINTS FROM LETTERS

Health and the Soil

Dr. A. D. WILLIS (Guildford) writes: The letter by Dr. G. T. Wrench (November 19, p. 1178) has stimulated no discussion, yet it is surely of vital importance. It is not widely realized that there is a direct relationship between human health and soil fertility, a capital asset which has been squandered throughout the world with a prodigal disregard for its consequences. The lost fertility can only be restored by a return to organic cultivation. . . . Lack of humus in the soil not only deprives plants of their natural food but changes the character of the soil and encourages erosion. By such methods and the wholesale slaughter of tree and hedgerow America leads the world in the creation of deserts; but there are signs that erosion has begun in England, particularly in East Anglia. Diseases and pests affecting plants have been well named by the late Sir Albert Howard as "nature's censors," since they do not attack the healthy plant to any significant extent. It is known that health in plants depends on following nature's law of return and also that animals feeding on such plants enjoy the same vigour and immunity from disease. . . . The time is, surely, appropriate to initiate a series of experiments embodying these principles and practices to test their validity in a scientific manner.

Dr. K. O. A. VICKERY (New Malden, Surrey) writes: Dr. G. T. Wrench's timely reminder of our neglect of the soil and our continued preoccupation with disease (November 19, p. 1178) must not pass unheeded. It is hardly suprising that there is no mention of the soil in the National Health Service, while we of the profession continue to pay such scant attention to the vital interdependence of soil, animal, and human health. . . .

Painful Experiments

Mr. J. L. DOBBIE (Manchester) writes: I am glad you found room to print at least one protest (December 10, p. 1356) under this heading. The question is whether we are capable of moving with the contemporary current of civilization. Such a question deserves more attention, and ought not to be bedevilled by the conflicting passions of vivisectors and their enemies.

Small Mothers and Large Babies

Dr. P. STACK (Worksop, Notts) writes: A primipara whose height is 4 ft. 10½ in. (168 cm.) was delivered with forceps of a living child weighing 10 lb. 7 oz. (4.73 kg.). . . .

Obituary

T. A. HINDMARSH, M.S., F.R.C.S

Mr. Thomas Albert Hindmarsh, of Newcastle-upon-Tyne, died on December 8 in Newcastle Infirmary at the comparatively early age of 60. "T. A.," as he was affectionately known among his colleagues, always intended to be a surgeon. It was to further that end that he took the Conjoint diploma in 1913 after graduating M.B., B.S at the University of Durham in 1911. The varied house appointments which he held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, in the medical, gynaecological and dermatological wards, apart from his period as a house-surgeon, served as a further preparation. Though it may have been without design, a short assistantship in a country practice followed by a partnership in a practice in Cumberland helped to make him a "good doctor" and contributed in after years to his successful handling of patients and his equally successful relationship with practitioners. In the 1914–18 war he served in the R.A.M.C. overseas, mostly in Salonika, and there he came in contact with many surgeons whose practice and outlook he analysed with discernment as a guide to his own future conduct.

Back in England it was not long before he was appointed a surgical registrar in his old hospital at Newcastle-upon-Tyne—a wonderful training school with a wealth of clinical material. During 1919 he took with first-class honours the M.S. of his own university, and in the same year the F.R.C.S. He was made assistant surgeon three years later and a full surgeon in 1935, and from then onwards he continued to serve the Royal Victoria Infirmary loyally and devotedly. In his short final illness his one desire was to get well enough to resume the work that he loved.

Hindmarsh was always a general surgeon with an aptitude for dipping into new fields. His craftsmanship was easy and effective, and in most cases produced a great measure of success. It was just that success and a certain emulation of the pioneer work of Sir Thomas Dunhill that attracted him to the surgery of toxic goitre, in which he eventually acquired an enormous experience and outstanding success. It was not only his care and skilful technique that brought these rewards, but a nice understanding of the problems of each individual case, an understanding and unremitting care which in the earlier days had to be sustained throughout the management of many critical cases. His optimistic approach to each problem was undoubtedly a great help, not only to his patients but to the nurses and those about him. Hindmarsh was a very successful abdominal surgeon, as so many of his friends and colleagues can testify from personal experience; he had long been a "doctors' surgeon." In this field of surgery he recognized few limitations and did most things well. His thorough grounding in principles undoubtedly helped him, and he was never appalled by impending or unexpected difficulties. In recent years he had been especially interested in the surgery of the sympathetic nervous system.

Though he never paraded his knowledge of surgical literature, Hindmarsh somehow was always up to date. He loved to travel, and was an acceptable and popular member of more than one surgical club. On visits to foreign clinics he showed himself a discerning observer and judge of men. Hindmarsh was not ambitious. His daily work filled his life and he wrote but little. His teaching was neither didactic nor systematic, but he had great influence among the students, who learned much from his informal

talks. It gave him pleasure recently when he was elected an examiner for the final Fellowship, and he was eagerly looking forward to his duties in this connexion. For years Hindmarsh had conducted a very large and widespread consulting practice, and in addition to his main work in Newcastle he operated regularly in outlying hospitals twenty to forty miles distant. In these areas his name was well known to doctors and patients alike.

"T. A." was a most lovable man, and he will be sadly missed in Newcastle. He had a warm, genial, kindly disposition and radiated good cheer. He loved to hear or to tell a good story. Although he worked so hard he found time to pursue his hobbies. He was a good golfer, a keen fisherman, and interested in music. He was happily married, and he leaves a widow and two daughters, to whom the sincere sympathy of all his colleagues and friends will be extended.—J. H. B.

A. J. HIRD, M.B., M.R.C.P.

Dr. Alan J. Hird, a junior lecturer in medicine at the University of Glasgow, was killed early on December 11 when he fell several hundred feet while undertaking an overnight climb of Am Bodach, a mountain near Kinlochleven. Dr. Hird was a member of the Scottish Mountaineering Club and a keen and experienced climber. His career, cut short at the age of 32 by this tragic accident, was one of great promise.

Alan James Hird was the son of the late Mr. James Hird, principal teacher of chemistry at Allan Glen's School, Glasgow. Educated at Glasgow Academy, of which he was dux at the age of 16, he entered Glasgow University and took a B.Sc. in 1937. He went on to graduate M.B., Ch.B. with honours in 1940. He then held resident posts as house-physician at the Western Infirmary, Glasgow, and house-surgeon at the Royal Hospital for Sick Children, before joining the Navy as a surgeon lieutenant. After completing his service Hird took the M.R.C.P. in 1947. He was then appointed medical registrar at the Southern General Hospital, Glasgow, and shortly afterwards was made a junior lecturer in medicine at the University, in the department of the Regius Professor of Medicine at the Gardiner Institute and Western Infirmary. Alan Hird was particularly interested in research on diseases of the blood, and he had already published a number of useful contributions. In the past year he had often been of much assistance to the *Journal* in writing annotations and occasional leading articles.

Hird was greatly liked by all his colleagues for his charming manner and for the firmness and resolution which he showed in his approach to any problem, whether in the clinical or research field. He was the only child of his widowed mother, and to her the sympathy of all his friends and colleagues will be extended.

Professor J. W. McNee writes : The tragic death of Dr. Alan Hird at the age of 32 in a mountaineering accident is a severe blow, both to Glasgow University and to the Western Infirmary. Hird was universally recognized among his colleagues, old and young, to be on the way towards a brilliant career in medicine, and his aptitude for independent research work was apparent to all. He was just in course of applying for one of the coveted Commonwealth Fund Fellowships, and if successful would have spent the next year or two at either Harvard or Rochester University in the United States on exciting research work, which he had already tentatively planned. Hird was a fine lad and greatly liked by all his colleagues. There is no doubt that a fine young physician, steadfastly moving towards the light, has been lost by the Glasgow School of Medicine.

Dr. EDWARD EDELSTEN BRIERLEY died suddenly in Ramsey, Isle of Man, on December 8 at the age of 78. His family came from the Rochdale area. He was proud of being a Haileybury man, and he graduated M.B., C.M. at Edinburgh in 1895. Five years later he took the F.R.C.S.Ed., and this was to affect some of the later phases of his career. He held some resident appointments and undertook a trip to the Far East before settling in practice in Cardiff in 1901. His practice developed rapidly and included some surgery, though he was narrowly unsuccessful in his application for a surgical post on the staff of the Cardiff Royal Infirmary. He found partnership helpful, notably that with Dr. Telford Morgan, who now carries on the practice. Brierley was a keen B.M.A. man, and filled many of the important Association offices locally as well as representing the Cardiff Division at the Representative Meeting almost without a break from 1915 to 1933. He was president of the South Wales and Monmouthshire Branch in 1931–2 and chairman of the Cardiff Division. He also served for ten years on the Charities Committee of the Association. His contributions to professional and medico-political discussions in Divisional and Branch meetings were able and interesting. Many will recall that when the Association was aroused by the advent of the Insurance Act his observations, while intensely critical, nevertheless conveyed a sense of the inevitability of some such development. Brierley was an ardent churchman, and for many years he was vicar's warden at the Church of St. John the Baptist, Cardiff. After 33 years in Cardiff it became necessary for family reasons that he should move to the Isle of Man. At Ramsey, from 1934 onwards, Brierley developed a moderate practice and at the same time, as was his custom, took up his interests in the Church and in medical politics. He became vicar's warden at the Church of St. Olave's, Ramsey. He was president of the Isle of Man Division of the B.M.A. from 1939 to 1943, and president also of the Isle of Man Medical Society. He worked, too, for the Red Cross Society, and with that body rendered sterling service during the war. He was an expert pigeon fancier, and it was just two days before his death that the award of a first prize to one of his exhibits was announced. Brierley was a man and a colleague whom it was a privilege to know. He was as upright in conduct as in figure. A very wide circle of friends will feel the utmost sympathy with those whom he leaves—his widow, whose devotion and expert knowledge of medical matters must have been of the greatest service, one daughter, and three sons, one of whom is in practice.—E. J. M

Dr. FRANK THORNTON BIRKINSHAW died suddenly at his home in Auckland, New Zealand, on October 2, 1949, at the age of 50 years. Born at Ovingham-on-Tyne in 1899, Dr. Birkinshaw was educated at the King Edward School, Birmingham, and at Birmingham and London Universities. He joined the Royal Warwickshire Regiment during the first world war and was later attached to the Royal Air Force, in which he saw service with a special duty flight attached to the Hedjaz army. He was for a time the personal pilot of T. E. Lawrence, and was decorated by the French and British Governments. After the armistice he returned to his regiment and later joined the Royal Army Medical Corps. He went to New Zealand in 1930, and practised in Amberley and Christchurch, where he was a vice-president of the Returned Services Association. Dr. Birkinshaw came to London in 1937 for postgraduate study. After 18 months he returned to Christchurch and in 1940 was appointed medical superintendent of the Coromandel Hospital. He relinquished this appointment in 1943 to commence practice in Auckland as a consultant physician. Dr. Birkinshaw is survived by his wife, Dr. Edna Birkinshaw, and by one son and one daughter.

Dr. WILLIAM SCOTT HALL, who died on November 14 at the age of 74, was for many years one of the best-known medical practitioners in Scunthorpe. Dr. Hall was a student at Marechal College, Aberdeen, and at the Middlesex Hospital, graduating M.B., Ch.B. in 1897. He came to North Lincolnshire as an assistant in practice at Althorpe before settling in Scunthorpe. Then in 1902 Dr. Hall went into partnership in Bradford, returning to Scunthorpe again after four years as a captain in the R.A.M.C. during the 1914–18 war. He retired from practice

only three years ago, and lived in the Isle of Axholme and subsequently at Epworth. Dr. Hall was a man of few words, sometimes difficult to approach, sometimes brusque and gruff in manner. These outward garments served only to hide a man of deep feeling and compassion, a doctor to whom the ills and distress of his patients were of real moment, distressing to himself. He had an independent outlook on medical problems, but he kept pace with the rapid advances in medicine, and his younger colleagues could always rely on a sound, modern, balanced, pithy comment on any subject under discussion. His practice extended far and wide in North Lindsey, his many patients relying on him to continue to serve them even at great distances. As a magistrate his deep insight into human behaviour was always of value to colleagues on the bench, where he joined his own sense of personal integrity with a sympathetic understanding of human failings. His interest in things other than medicine was wide. He had pronounced views on the failings of our social order, and could speak vehemently at times of need for change. His great hobby was the collection of old prints and etchings, about which he had something of a connoisseur's knowledge. His widow and two sons and two daughters survive him.—J. R. B. and W. H. B.

Dr. ALFRED ERNEST REMMETT WEAVER, who died on November 15, was formerly medical officer of health for Weston-super-Mare. A student at Birmingham University, he graduated M.B., Ch.B. in 1904, proceeding M.D. two years later and taking the D.P.H. in 1908. He entered the public health service in 1906, and was for more than 20 years deputy to Sir William Savage, who was then county medical officer of health for Somerset. Then in 1929 Dr. Remmett Weaver succeeded the late Dr. John Wallace as medical officer of health for Weston-super-Mare. He continued in this appointment until his retirement in August, 1941. He acted also as superintendent of the isolation hospital, and he was responsible for creating an up-to-date maternity and child-welfare service for Weston. In his retirement Dr. Remmett Weaver continued to play an active part in local affairs. He did a great deal of work for St. Paul's Church, where he was churchwarden, and recently represented the church at the Locking Ruri-decanal Conference. He was a past president of the local Rotary Club, and took a keen interest in the Somerset Association for Mental Welfare and in the local Tuberculosis Care Committee.

Dr. WILLIAM HILTON PARRY died suddenly at his home in Caernarvon on November 19. A son of the late Dr. Robert Parry, he was born in Caernarvon and educated at Llandovery College, the University College of Wales, Aberystwyth, and Liverpool University. He graduated M.B., Ch.B. in 1911, and was house-surgeon and subsequently house-physician at the Royal Southern Hospital, Liverpool. In September, 1914, he was posted to the 14th General Hospital at Wimereux, and a year later he transferred to the No. 3 Field Ambulance of the 1st Division. He then served as medical officer of the 4th Battalion, Grenadier Guards, and later was with the 3rd Guards Brigade in the Battle of the Somme and was twice mentioned in dispatches. For his work during the Passchendaele attack he was granted an immediate award of the M.C. At the end of 1917 he was graded unfit for further service abroad and appointed surgeon specialist at the Alder Hey Military Hospital. A few months later, however, he managed to get back to France, where he served with distinction while attached to the Australian Division. On demobilization Dr. Hilton Parry joined his father in general practice in Caernarvon. Shortly afterwards he was appointed medical superintendent to the Gallt-y-sil Isolation Hospital, and he later became superintendent of the Eryri Hospital and Bodfan Mental Home, medical officer of the port sanitary authority, and police surgeon. He had been a borough magistrate since 1930, and for many years was a member of the local panel committee, serving as its chairman for a time. He was made chairman of the North Caernarvon and Anglesey Division in 1928–9, and was president of the North Wales Branch in 1945–7. During the recent war Dr. Hilton Parry served as chairman of the local medical board. He also acted as medical officer of a Caernarvonshire Home Guard battalion, and was later promoted to zone medical officer for Caernarvonshire with the rank of lieutenant-colonel. In 1945 he was accorded the honour of nomination as high sheriff of Caernarvonshire. In recent years Dr. Hilton Parry had been a member of the local executive council and of the local medical committee for the area. In his youth Dr. Hilton Parry was an enthusiastic athlete, and at the age of 17 he swam the Menai Straits at their widest point. He was a keen footballer and cricketer and also a useful boxer. He leaves a widow, one son, and one daughter. His elder daughter was killed in a London hospital, where she was nursing, during a flying-bomb attack in July, 1945.

A colleague writes: As a surgeon Dr. Hilton Parry was cool, resourceful, and undaunted by unexpected difficulties. He was at his best in operating on the many and varied acute abdominal conditions that he was called on to treat. A pupil of the Liverpool School, he was adroit in handling fractures, and he also had a long run of successful caesarean sections in the days before the modern maternity centres were available in the district. On a holiday outing his greatest pleasure was to bring along one or more of his friends to accompany him. Many of us have happy memories of summer afternoons in his boat in Caernarvon Bay, or trawling in the Menai Straits in the winter. On such occasions he was a genial and generous host.

Lieut.-Colonel Sir Goronwy Owen, D.S.O., writes: By the death of Dr. W. Hilton Parry the town and county of Caernarvon have lost a much loved and highly respected figure. He had had a distinguished career, not only as a medical practitioner in civilian life for a period of 30 years, but also as a medical officer on active service in the first world war. His unfailing cheerfulness and his optimism endeared him to his patients in all ranks of life, and his indomitable courage in the face of his own agonizing illness placed him in a category of his own. His interests were not confined to his profession, but embraced many other activities and hobbies. He discharged his duties as a magistrate and as chairman of the advisory committee with the same punctiliousness and conscientiousness that he devoted to his profession, and not the least of his activities was his devotion to the Sea Cadets. He was also a keen photographer and yachtsman. In truth, he was a man of sterling character and of many parts.

Dr. FRANK HUSBAND-CLUTTON died on November 19 at his home in Crowland, Peterborough, at the age of 78. Dr. Husband-Clutton, who had been in failing health for two years, was well known in Crowland, where he had lived for 53 years. A student of Bristol University and Guy's Hospital, he qualified in 1894, and went on a voyage to India as a ship surgeon before settling at Crowland in 1896. Over the next 34 years, until his retirement in 1930, he was medical officer and public vaccinator for the Crowland district of the Peterborough Union. He was also medical officer for the Crowland rural council. While in practice and afterwards Dr. Husband-Clutton took a great interest in the work of the British Medical Association, and he was chairman of the Holland Division of the B.M.A. in 1924–5. It was after he retired that he became most active in local affairs. He served on the Spalding Council for many years, on the Holland County Council, and had been a magistrate since 1933. He is survived by his widow and a son and a daughter, to whom the sympathy of all his many friends will be extended.

Dr. ROBERT FRANCIS GERRARD died at his home in Great Sutton, Cheshire, on November 19 at the age of 74. A Lancashire man, he was educated at the Collegiate School, Chester, and at Liverpool University. He qualified in 1906, and after holding several assistantships in Lancashire settled down in Ellesmere Port, where he practised until a little over a year before his death. He was one of the early pioneers in the establishment of the district hospital, and was for many years chairman of the medical board. He was chairman of the Ellesmere Port Nursing Association for a long period, and he was police surgeon and a factory surgeon for many years. He was also a lecturer to the St. John Ambulance Association and did much to establish the association on a firm basis in

Ellesmere Port. Before the outbreak of the 1914–18 war Dr. Gerrard was prominently associated with the Cheshire Yeomanry, of which he was at one time medical officer. While serving in the Near East in 1916, attached to the Welsh Border Mounted Brigade Field Ambulance (74th Division), he was mentioned in dispatches. Dr. Gerrard always had the interests of Ellesmere Port at heart and was elected to the council in 1930, becoming chairman in 1933–4. He will be best remembered, however, by his colleagues in Birkenhead and Wirral as an active member of the B.M.A. He represented his constituency at the Annual Representative Meeting in 1946, and he was chairman of the Birkenhead and Wirral Division during the difficult period 1946–7. He was a fine family doctor, and his widow and two daughters, both of whom are members of the profession, will have the sympathy of his many friends, patients, and colleagues.—R. W. L. P.

Dr. THOMAS HUGH ROBINSON MCKIERNAN died at his home in Falmouth on November 21 at the age of 56. He was the fourth son of T. C. McKiernan, of Dublin, and was educated there at Mountjoy School and later Trinity College. On the outbreak of war in 1914 he interrupted his studies and at once volunteered as a surgeon-probationer R.N. After a period of service he was sent back to complete his medical studies in 1918, and immediately afterwards he rejoined as a surgeon lieutenant. Following his demobilization he was resident surgeon at Dr. Steevens's Hospital, Dublin, and later went to New Zealand, where he was medical superintendent of the N. Wairoa Hospital. Returning to this country, he settled in Falmouth, and soon built up a large practice, mainly surgical, in Falmouth and the surrounding country. He was one of the last of the dwindling body of general-practitioner surgeons. Dr. McKiernan was a quiet and retiring man, in whom his patients had profound confidence. He lived for his work, and paid frequent visits to the surgical clinics of America and the Continent. The death in action of his only son in 1940 was a great blow, a tragedy from which he never fully recovered. He had been ill for some years, and, in spite of advice to the contrary, continued to work at high pressure. As he would have wished, his end came when he was still in harness. To his widow the deepest sympathy of his friends will be extended.—J. A. S.

Dr. JOHN GORDON GORDON-MUNN died on November 29 at his home in his native Scotland. He was aged 86 and was the son of a distinguished Edinburgh mathematician. He graduated M.B., C.M. at Edinburgh University in 1889, proceeded M.D. with first-class honours in 1896, and was later elected F.R.S.Ed. Dr. Gordon-Munn served as medical officer to the 1st Battalion of the Grenadier Guards in South Africa and gained the South African Medal with six clasps. Returning to this country, he started in psychiatric work at Cane Hill Mental Hospital in association with Rotherham, Pope, and Armstrong Jones. After his training there in this distinguished company he took over the Heigham Hall private mental hospital in Norwich, and soon built up a large consulting practice. He retired in 1920. His professional duties permitted him little leisure to participate in outside activities, but in 1914 he was appointed lord mayor of Norwich, and worked hard and enthusiastically at his new duties. When war was declared he did a great deal for the public safety and was especially proud of his achievement in raising at the request of the Army Council a new unit for the Regular Army—the Norfolk Divisional Engineers, 1,230 strong. Dr. Gordon-Munn was a sound psychiatrist, and he will be missed by many friends. A bachelor, he was a wonderful host in his own house.—J. A. S.

Dr. LESLIE ALFRED HUMPHREY died on December 1 at the age of 32. During his early years in Tunbridge Wells he grew up a kind, charming, and seemingly idle lad, and it was only towards the end of his time at Winchester that he began to show the breadth of interests and the intellectual qualities which endeared him to such a wide circle of friends. At Trinity College, Cambridge, he learned much about life and rather less than his tutor thought proper about natural science. On going down from Cambridge, he joined I.C.I., Ltd., as a trainee, but when his father offered to make it possible for him to take up medicine he grasped the opportunity. He went to University College Medical School at the beginning of the war, when it was evacuated to Leatherhead and subsequently Cardiff. After a hesitant start Humphrey adapted himself to student life, and in the combination of scientific discipline with personal contact and interest provided by a medical training he found the outlet for his energies which he had been seeking. None of his contemporaries are likely to forget his enthusiasm, enterprise, and personality. After qualifying in 1944 he went to the West Middlesex County Hospital, first as house-surgeon and then as house-physician. Although this was his first medical post, he started a diabetic clinic and trained himself to make the electrocardiographic reports for the whole hospital. Some of his colleagues will remember his plan to commission artists to paint friezes in the children's wards—a plan which might have been accepted in other circumstances than those of the war. It soon became clear to him that he would not obtain a fundamental understanding of disease solely by clinical work, and he determined to become a pathologist. This was not undertaken as an aim in itself, but with the idea that he should equip himself sufficiently to form part of a team which could study particularly psychosomatic disorders. In this he was influenced by the work of Sheldon. He was accepted as a trainee in the Emergency Pathological Service, and spent two years in the sector laboratory at Ashford County Hospital, where, as always, he made many friends. At the end of his training he was placed in charge of the laboratory at the Queen Alexandra Military Hospital, Millbank. He was due for demobilization at the end of this year, and had been offered a research post which would have given him his first real opportunity to test some of his ideas. In February, however, he developed an obscure illness which was later proved to be periarteritis nodosa. Although aware of his condition, and although blind for the last three months of his life, he never lost any of his charm or dignity. Rather did he grow in intellectual stature, so that persons who went to visit a very sick man found themselves talking with one who was at least an equal, and who had turned his illness into an opportunity for reflection. In 1946 he married Lorna Ince, who survives him with two children.

Medico-Legal

IDIOSYNCRASY TO WHOOPING-COUGH VACCINE

On November 30 an inquest was held in Hanley on the death from encephalopathy of an eight-months-old infant. According to a recent press report[1] death was apparently due to an idiosyncrasy to pertussis vaccine.

The father gave evidence that his son, one of twins, had been in good health up to Saturday, November 26, when he was taken to the Hanley Clinic to receive inoculations against diphtheria and whooping-cough. Both children were immunized in the morning and were taken home by their mother. At about 6 p.m. one child began to cry and make strange movements with his arm. A doctor was called and the baby was admitted to hospital at 1.30 a.m. on the Sunday morning. The infant died less than an hour after admission.

Dr. C. Giles said he had never seen such an unfortunate consequence of whooping-cough inoculation. He had little doubt that it was the whooping-cough vaccine and not the diphtheria vaccine that was responsible. So far as he knew this was the first case of its kind to be reported in this country, although several had been reported in the United States. There was nothing to show that the inoculation was not properly carried out, and a number of children had been inoculated with material from the same bottle of vaccine without ill effect. The vaccine was now being examined at the Central Public Health Laboratory in London.

The coroner, who returned a verdict in accordance with the medical evidence, told the father that he had been right in consenting to the immunization being performed. This case was "perhaps one in hundreds of thousands."

[1] *Hanley Evening Sentinel*, November 30, 1949.

Medical Notes in Parliament

On December 16, before Parliament was prorogued, the Royal Assent was signified to the National Health Service (Amendment) Act, the Criminal Justice (Scotland) Act, the Nurses (Scotland) Act, the Adoption of Children Act, and other Acts.

Medical Services in Malaya

Colonel STODDART-SCOTT on December 3 invited Mr. Shinwell to make a statement with regard to the medical services provided for British troops in the Malayan campaign, and to state what improvements could be expected in the immediate future.

Mr. SHINWELL in reply said the medical services in Malaya included an adequate number of Service hospitals and medical officers to maintain the normal health of the troops and to care for the sick and wounded. Difficulties, however, arose in securing the immediate surgical treatment of battle casualties. Since fighting was carried on by numerous small columns of troops which operated in difficult country and were frequently on the move, it was impracticable to provide surgical facilities for carrying out operations in the immediate vicinity of the fighting. Consequently it was necessary for casualties to be evacuated to the hospitals where surgical attention could be given.

There were three Service hospitals in Malaya District, which covered the mainland of Malaya, but there was only one Army surgeon. It had accordingly been necessary to utilize the services of civil surgeons. In Singapore island there were three Service hospitals and three Army surgeons. To meet the deficiencies of surgeons in the Army as a whole, arrangements had been made to engage immediately a number of civil surgeons for short-term contracts. Three had already accepted the terms and conditions of service. Subject to their being physically fit they would be sent to the Far East as soon as possible to complete the establishment in that theatre. The evacuation of casualties presented great difficulties in view of the nature of the country. Efforts had been made for a considerable time to devise a suitable means of air transport from the jungle to the nearest hospital. Various tests had been undertaken, and work was proceeding on the modification of three helicopters to make them suitable for this task. They should arrive in Malaya in April, 1950. In the meantime, the effects of delay before surgical treatment were being minimized so far as possible by the use of penicillin and other drugs.

Antihistamines and the Common Cold

On December 13 Mr. JOHN LEWIS drew attention to the claims recently made in the United States of America about the efficacy of antihistamine preparations for the treatment of the common cold.

Mr. HERBERT MORRISON said in reply that the claims to which Mr. Lewis referred were of great interest to the Medical Research Council workers studying the problem of the common cold at the Harvard Hospital, Salisbury. Unfortunately, a carefully controlled attempt, made last spring, to confirm the value of one of the drugs most commonly recommended in America failed to show that it had any dramatic effect. The experiment emphasized the need for great care in assessing the claims made for cold cures, in view of the extremely variable natural duration of colds without special treatment.

Principals and Assistants in Scotland.—Mr. RANKIN on December 13 invited the Secretary of State for Scotland to indicate the number of general practitioners acting as assistants under the National Health Service scheme, and the number who were principals. Mr. WOODBURN said that on October 1, 1949, the number of assistants in Scotland was approximately 250, and the number of principals was 2,411.

Mass Radiography in Scotland.—Over 300,000 examinations have been carried out by mass radiography in Scotland since 1944. In the last year for which figures are available, up to June 30, 1949, over 97,000 examinations were made, as a result of which 670 persons were found to have active tuberculosis.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

FINAL M.B.—*Part I (Surgery, Midwifery, and Gynaecology):* M. S. Aldridge, I. I. Bornstein, A. S. F. Butcher, D. Butcher, E. P. Cadbury, N. I. Cardno, J. S. W. Chambers, A. C. Chovil, E. H. Coats, J. E. Dalby, J. W. B. Dalgleish, T. D. W. Davies, H. de Glanville, B. O. L. Duke, D. S. Eastwood, J. G. Elliott, J. Fairgrieve, P. R. Gittins, B. M. Gray, K. W. Gray, K. E. Halnan, J. M. Hodson, G. Holden, T. M. Howell, P. G. A. Irvine, J. D. Jackson, F. E. Kirk, T. P. Kissack, J. F. Lees, C. R. Leeson, T. S. Leeson, D. W. Lemmon, J. P. Lester, R. J. Lunniss, J. P. Lythgoe, K. M. McFadyean, K. G. P. Mackenzie, E. Marley, K. R. Mason-Walshaw, B. J. Muir, A. D. Muirhead, M. J. D. Newman, R. H. Oram, E. M. Orton, G. B. R. Oswald, M. J. Peel, G. N. St. J. Penney, J. C. E. Peshall, S. T. Pickles, R. B. Prowse, D. R. Pugh, J. C. A. Raison, P. J. Randle, M. Rayne, J. N. Redfern, J. R. Rees, A. M. Richardson, C. R. Robinson, J. H. Ross, J. J. H. Rymer, G. E. Sayce, J. O. Seville, I. M. Simmonds, V. H. Smith, J. B. Spargo, D. R. Sweetnam, Mrs. E. R. Taylor, J. C. Turner, A. G. Wallace, W. J. Wigfield, P. L. Williams.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following medical degrees and licences were conferred on December 8:

M.D.—W. E. R. Hackett, F. J. C. Loughran, J. D. McKeever, Irene S. Orgel.

M.B., B.CH., B.A.O.—J. H. Ashmore, Evelyn Browne, Joan I. Buchanan, L. J. Clein, Margaret B. E. Ellis, E. G. England, R. C. Gray, R. ff. Jackson, Vyvyan I. K. Johnston, O. H. Killen, W. A. McGaw, E. B. McHugh, Sheilagh M. McHugh, W. D. McNaul, T. T. E. Michael, E. V. Page, Ruth M. Perrott, Gwendoline G. L. Poots, W. D. H. Powell, R. N. Siberry, B. A. McC. Thompson, F. A. Walkey.

LICENCE IN MEDICINE, SURGERY, AND OBSTETRIC SCIENCE.—B. J. O'Reilly.

UNIVERSITY OF LONDON

Antony Clifford Dornhorst, M.D., M.R.C.P., has been appointed to the University Readership in Medicine tenable at St. Thomas's Hospital Medical School from October 1, 1949.

William Howard Hughes, M.D., has been appointed to the University Readership in Bacteriology tenable at St. Mary's Hospital Medical School from October 1, 1949.

Jack Joseph, M.B., Ch.B., M.R.C.O.G., has been appointed to the University Readership in Anatomy tenable at Guy's Hospital Medical School from April 1, 1950.

Raleigh Barclay Lucas, M.D., M.R.C.P., has been appointed to the University Readership in Pathology tenable at the Royal Dental Hospital of London, School of Dental Surgery, from January 1, 1950.

The title of Reader in Pharmacology and Therapeutics in the University has been conferred on Cyril Arthur Keele, M.D., F.R.C.P., in respect of the post held by him at the Middlesex Hospital Medical School.

Professor F. R. Winton and Mr. P. H. Mitchiner have been appointed representatives of the University on the governing bodies of the Institute of Psychiatry and Reigate Grammar School, respectively.

The following have been recognized as teachers of the University in the subjects indicated in parentheses: *King's College Hospital Medical School:* Dr. R. S. Lewis (Oto-rhino-laryngology); Dr. Mary J. Wilmers (Children's Diseases). *Middlesex Hospital Medical School:* Dr. J. A. Hobson (Mental Diseases); Mr. I. MacG. Jackson (Obstetrics and Gynaecology). *Royal Free Hospital School of Medicine:* Dr. Frances Gardner (Medicine); Dr. Gladys Hill (Obstetrics and Gynaecology); Mr. G. Qvist (Surgery). *St. Mary's Hospital Medical School:* Mr. A. G. Cross (Ophthalmology); Dr. L. H. Morris (Anaesthetics). *University College Hospital Medical School:* Mr. J. W. Schofield, M.R.C.S., L.R.C.P., F.D.S. (Dental Surgery). *Westminster Medical School:* Dr. G. Garmany (Mental Diseases). The following teachers have been granted probationary recognition for two years from October, 1949: *London Hospital Medical College:* Mr. A. M. Horsnell, M.R.C.S., L.R.C.P., L.D.S. (Dental Surgery). *Royal Free Hospital School of Medicine:* Dr. A. G. Stansfield (Pathology (Morbid Anatomy)).

The John Marshall Fellowship in Surgical Pathology, of the value of £700 a year, for two years in the first instance and tenable at University College Hospital Medical School, has been awarded to Benjamin Bethel Milstein, M.B., B.S., F.R.C.S.

The following candidates have been approved at the examinations indicated:

POSTGRADUATE DIPLOMA IN PSYCHOLOGICAL MEDICINE.—[1]E. Brenman, [1]W. Calder, [1]D. H. Clark, [1]J. A. Ewing, [1]Joan I. Hallinan, [1]J. Hönig, [1]S. Jacobson, [1]J. M. Macdonald, [1]J. H. McDougall, [1]D. F. Macgregor, [1]S. Mansvelt, [1]J. D. Morrissey, [1]C. Rose, [1]Lotte Rosenberg, [1]I. M. Shepherd, [1]M. Shuaib, [1]R. L. Sikes, [2]R. J. Stanley. The following have passed in Part A only: A. S. Clenaghan, K.-C. Dubé, O. Elgarem, L. H. Field, Mercy I. Heatley, J. C. S. Houston, B. J. Phillips, A. A. Robin, D. B. Stone, A. A. Valentine, H. de B. Warren, R. H. Wheeler.

[1]With Mental Diseases (Psychiatry) in Part B. [2]With Mental Deficiency in Part B.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

PATHOLOGY AND BACTERIOLOGY.—A. G. Alexander, S. I. Davies, A. R. Harris, S. E. Ll. Morris, G. J. Moses, S. J. S. Polwin, Elizabeth M. M. Price, Margaret Pugh, T. A. I. Rees, Esther H. Thomas.

MEDICINE.—Marjorie J. Adams, C. H. Burman, R. B. Davies, B. M. Frost Smith, J. I. Hopkins, H. B. Jenkins, Beryl H. Jones, Mair G. Lloyd, D. Phillips-Miles, H. M. N. Rees, R. M. Richards, C. P. Seager, D. G. H. Thomas, J. D. Thomas.

PHARMACOLOGY.—Vyvian J. Bennett, B. N. Davies, W. E. J. Horton, J. H. Naysmith, C. J. Revington, Joyce M. Smith, Glenna Thomas, M. S. I. Wilkinson, Isobel M. Young.

K. S. Ray has satisfied the examiners at the examination for the Tuberculous Diseases Diploma.

QUEEN'S UNIVERSITY, BELFAST

The following candidates have been approved at the examinations indicated:

M.D.—[1]T. J. Harrison. W. I. Forsythe, Maude Stevenson, F. R. Johnson.

M.B., B.CH.—[2]Mary F. Brown, [2]E. N. F. Browne, [2]H. M'W. Lyle, B. J. Beatty, Hester C. Blagden, J. Blundell, R. H. Bolton, Barbara J. Bunting, Ruth M. Burns, M. M'C. Burrows, L. J. Byrne, R. L. Carson, J. C. Clarke, J. M. Clarke, W. H. Cochrane, Joan S. Dales, A. D. Dickson, Abigail F. R. Dodd, D. M. Downing, S. D. Emerson, J. T. Fisher, Margaret L. Fisher, Agnes A. Flewett, V. R. Gardiner, J. D. Glover, J. G. Gray, I. H. Greer, Denise M. Hall, J. H. Harland, Louise M. E. Hogg, J. G. Hudson, L. J. Hurwitz, R. B. Irwin, H. F. Jackson, S. M. Johnston, Margery C. Jones, T. W. Leitch, J. M. B. Lenfesty, Elizabeth S. Lindsay-Rea, J. B. Lowry, Jean E. M'Gowan, H. D. M'Kee, J. C. M'Nulty, H. H. M'Cartney, S. A. Millen, Elizabeth M. J. Milligan, O. H. A. Mitchell, W. R. Moffatt, E. J. Mulholland, D. Murphy, J. R. Nelson, K. A. Nelson, K. G. Orr, R. A. Robinson, Olive M. Russell, W. E. B. Scott, R. W. Simpson. H. J. Sloan, J. H. Smith, Dorothy Stewart, R. C. Stewart, F. R. Stinson, H. P. Swan, Charlotte M'E. Taggart, Patricia A. Thomas, T. N. F. Todd, H. A. Wagner, M. J. Wauchob, N. W. F. Weir, Edith S. Wells, R. W. Whiteley, L. M Wolf. G. I. Young.

[1]With commendation. [2]With second-class honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council of the College held on December 8 with Sir Cecil Wakeley, President, in the Chair, Sir Harry Platt was appointed Bradshaw Lecturer for 1950.

The following examiners were appointed for the Primary Fellowship examination to be held in Ceylon, India, and Pakistan: Sir Gordon Gordon-Taylor (Anatomy), Professor G. Hadfield (Pathology), and Professor A. St. G. Huggett (Physiology).

Sir James Paterson Ross was reappointed as the Representative of the College on the Council of the National Association for Mental Health.

Hunterian Professorships were awarded to Professor Milroy Paul (Ceylon) and Mr. R. T. Johnson (Manchester).

The following hospitals were recognized under the F.R.C.S. regulations:—*General Surgery:* Auckland, New Zealand—Cornwall Hospital, Green Lane Hospital, and Middlemore Hospital (while controlled by the Auckland Hospital Board); Sydney, N.S.W.—Royal North Shore Hospital (being a teaching hospital); Brisbane—Mater Misericordiae Hospital (for six months only); Hobart—Royal Hobart Hospital; Launceston—Launceston General Hospital. *Ophthalmology and Otolaryngology:* Derby—Derbyshire Royal Infirmary; Brisbane—Mater Misericordiae Hospital; Victoria—Victorian Eye and Ear Hospital.

DIPLOMAS

Diplomas of Fellowship were granted as follows: J. L. Reid G. D. Channell, J. C. Watts, I. A. Donaldson, R. Ramsay, B Fairburn, N. C. Rogers, F. S. Gorrill, F. A. Henley, S. Pillai, L. A Atkinson, R. C. Jack, D. O. Williams, J. S. Tomkinson, A. E Howarth, H. A. Ripman, D. A. Langley, M. G. Wilson, J. P Mitchell, D. L. Evans, M. P. Durham, J. W. Betts, F. T. Graves G. S. Ramsay, F. R. Sutton, D. A. T. Farrar, B. H. Hand, D. W Thomas, M. O. Carruthers, K. Chitty, B. V. Jones, R. W. Tudor V. S. Brookes, D. A. C. Reid, A. Brown, A. W. Nurick, I. P Todd, I. B. Smith, J. S. R. Golding, A. M. H. Bennett, N. J Blockey, A. G. Dingley, P. N. Robson, J. F. Bolton Carter, M. C. T Reilly, C. Taylor, R. Iskander, M. A. Radwan, A. J. Clyne, W. W Davey, M. M. Nath, Marjorie A. Powys, S. A. Bond, J. N Appleton, W. M. Manchester, B. M. Omar, T. G. Barlow, R. D Condon, H. H. Gilbert, H. El S. Higazi, G. P. Ramayya, T. G Cameron, W. W. Hallwright, L. Bonnin, R. R. Dickson, P. H Greenwell, J. S. Guest, L. Jayasuriya, R. C. R. Loane, A. F. Murphy E. R. W. Thomson, A. J. Alldred, J. Block, P. W. Cotter, C Dundon, R. C. Evans, B. P. Flannery, F. E J. Gabel, A. J. Gunning G. F. T. W. Henson, T. P. Morley, R. Patuck, A. Roper, M. I Symonds, D. Ainslie, A. Clain, P. R. R. Clarke, C. P. de Fonseka J. Hewet, D. A. Macfarlane, A. B. Mackenzie, W. J. McLaren, I. W MacPhee, T. H. L. Rosser, C. L. Tucker, L. S. Walsh, J. A. Baird H. D. W. Black, A. F. Bromwich, M. F. Butler, J. F. Dark, N. C Davis, J. D. K. Dawes, W. R. Lang, W. A. Liddell, N. J. Shah D. B. Caro, D. H. Keller, D. N. Ross, A. G. Parks.

The following lectures will be delivered at the College (Lincoln's Inn Fields, London, W.C.) at 5 p.m. each day. January 3, Erasmus Wilson Demonstration by Mr. C. E. Shattock, "Tumours of the Kidney"; January 5, Otolaryngology lecture by Mr. Rainsford Mowlem, "Injuries of the Nose and Sinuses"; January 6, Erasmus Wilson Demonstration by Mr. C. E. Shattock, "Tumours of the Testicle"; January 11, Erasmus Wilson Demonstration by Mr. L. W. Proger, "Recent Additions to the Museum"; January 12 Ophthalmology Lecture by Professor Arnold Sorsby, "Prospects in the Control of Genetic Disease"; January 17, Arris and Gale Lecture by Mr. F. Douglas Stephens, "The Diagnosis and Management of Hirschsprung's Disease"; January 18, Arris and Gale Lecture by Mr. D. F. Ellison Nash, "The Surgical Aspects of Renal Damage in Childhood: Assessment, Salvage, and Aftermath". January 19, Erasmus Wilson Demonstration by Dr. Magnus Haines "Tumours of the Ovary"; January 24, Erasmus Wilson Demonstration by Mr. L. W. Proger, "Recent Additions to the Museum." The lectures are open to those attending courses in the College and to all other medical practitioners, dental surgeons, and advanced students.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

Mr. Terence Millin will deliver the Miss Weild Lecture in the Hall of the Faculty, 242, St. Vincent Street, Glasgow, on Wednesday January 11, 1950, at 5 p.m. His subject is: "Retropubic Surgery." Medical practitioners are invited to attend.

The Services

Surgeon Lieutenant-Commander E. J. S. Woolley, O.B.E. R.N.V.R., has been awarded the R.N.V.R. Decoration.

Brigadier J. M. Macfie, C.B.E., *M.C.*, has been appointed Commandant and Director of Studies, Royal Army Medical College and has been granted the temporary rank of major-general.

The Efficiency Decoration of the Territorial Army has been conferred upon Major F. H. Blackburn, R.A.M.C., T.A.

The Efficiency Decoration and 1st Clasp of the Territorial Army has been conferred upon Lieutenant-Colonel A. G. Henderson and Major W. B. Evans, R.A.M.C., T.A.

The following have been mentioned in recognition of gallant and distinguished services in Malaya during the period January 1, 1949, to June 30, 1949: Colonel A. E. Campbell, late R.A.M.C.; Colonel (temporary) R. S. Dickie, Lieutenant-Colonel W. A. Y. Knight, and Captains G. B. Brown, A. C. Milne, and J. C. Walker, R.A.M.C.

In the Northern Ireland Parliament recently the Parliamentary Secretary to the Ministry of Health and Local Government said that special geriatric units had been established in Ballymena and at the Belfast City Hospital. There was accommodation at Ballymena for 130 and at Belfast City Hospital for about 300 cases.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended December 3. [No. 48

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949 (a)	1949 (b)	1949 (c)	1949 (d)	1949 (e)	1948 (Corresponding Week) (a)	1948 (b)	1948 (c)	1948 (d)	1948 (e)
Cerebrospinal fever	26	6	14	—	—	33	2	19	1	1
Deaths		1	—				—	1		
Diphtheria	90	11	29	6	6	131	10	42	6	4
Deaths	—	—	—	—	—	1	—	—	—	—
Dysentery	159	10	94	—	—	64	10	44	2	2
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	—	—	—	—	—	—	—	—
Deaths		—					—			
Erysipelas			35	10	5			38	10	3
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				28					37	
Deaths	18	2	4	3	2	33	1	3	2	4
Measles*	1,654	31	23	92	116	8,562	157	165	90	66
Deaths†			—	—	—			—	—	—
Ophthalmia neonatorum	38	1	5	1	—	47	—	8	—	—
Deaths										
Paratyphoid fever	7	—	—	—	—	10	2	1 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	715	42	7	4	6	897	60	3	4	4
Deaths (from influenza)‡	33	5	1	1	—	25	3	3	1	1
Pneumonia, primary			350	28				337	28	
Deaths	274	58		11	5	316	73		4	11
Polio-encephalitis, acute	15	4				9	1			
Deaths										
Poliomyelitis, acute	141	12	7	2	3	51	—	4	1	—
Deaths§	6	1				1	—			
Puerperal fever		—	10				—	1		—
Deaths										
Puerperal pyrexia‖	70	11	3	—	—	108	11	9	—	—
Deaths		—					1			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	2,755	183	284	157	274	1,527	71	294	194	54
Deaths†			—	—	—					
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	9	—	1	11	—	4	—	—	2	—
Deaths	1	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	981	36	82	44	45	2,562	141	132	58	11
Deaths	2	—	—	—	—	8	—	1	—	—
Deaths (0–1 year)	251	37	51	46	4	341	36	35	17	11
Deaths (excluding stillbirths)	5,481	893	632	185	133	5,967	1019	698	198	119
Annual death rate (per 1,000 persons living)			12·7	11·5				14·1	12·4	
Live births	6,841	1067	835	264	197	7,607	1107	913	436	250
Annual rate per 1,000 persons living			16·7	16·4				18·4	27·3	
Stillbirths	169	22	21			178	20	38		
Rate per 1,000 total births (including stillborn)			25					40		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Poliomyelitis

The number of notifications in the week ended December 10 were: poliomyelitis 124 (141), polio-encephalitis 10 (15). Figures for the previous week are shown in parentheses. The total of 134 notifications of poliomyelitis and polio-encephalitis together may be compared with 76 in the corresponding week of 1947 and 36 in 1948. In 1926 the corresponding figure was 43 and in 1938 it was 30.

Multiple cases were reported from the following counties: London 15 (16), Bedford 2 (0), Buckingham 3 (2), Cambridge 3 (1), Chester 4 (2), Cumberland 3 (0), Devon 2 (0), Dorset 4 (1), Essex 10 (7), Gloucester 2 (7), Hertford 3 (2), Kent 8 (10), Lancaster 9 (14), Middlesex 6 (15), Norfolk 4 (4), Northampton 2 (1), Nottingham 3 (6), Southampton 2 (5), Stafford 3 (5), Surrey 6 (6), East Sussex 5 (4), Warwick 5 (6), East Yorks 2 (0), West Yorks 13 (19), Glamorgan 4 (6).

Discussion of Table

In *England and Wales* there were decreases in the notifications of scarlet fever 72, whooping-cough 54, diphtheria 31, and poliomyelitis 35; the only appreciable increase was in the incidence of measles 185.

The only changes of note in the notifications of measles were increases in Norfolk 144 and Durham 125. The total notifications in these two counties formed 56% of the total for the country as a whole.

The largest decreases in the incidence of scarlet fever were London 41 and Derbyshire 38; the largest increase was Middlesex 34. Notifications of diphtheria decreased in Lancashire 11 and London 7 and increased in Cheshire 5; the main centres of infection during the week were Birmingham C.B. 12, London 11, Birkenhead C.B. 8, and Liverpool C.B. 8.

The largest fluctuations in the local returns of whooping-cough were a rise of 34 in Yorkshire West Riding and a fall of 34 in Lancashire.

Notifications of dysentery during the week included Gloucestershire 30 (Bristol C.B. 9, Cheltenham R.D. 21); Lancashire 21 (Wigan C.B. 9); Cheshire 16 (Ellesmere Port U.D. 14); Yorkshire West Riding 16 (Leeds C.B. 5); Glamorganshire 16 (Cardiff C.B. 6, Cardiff R.D. 6); Durham 12 (Sunderland C.B. 5); London 10. The only large outbreak of food-poisoning notified was in Somerset, Wincanton R.D., where there were 60 cases.

In *Scotland* decreases were recorded in the notifications of acute primary pneumonia 84, scarlet fever 81, and measles 16, while the only increase of any size was whooping-cough 19. A decrease in the incidence of scarlet fever and pneumonia was noted in most areas of the country. Another 28 cases of dysentery were notified from the outbreak in Stirling county, where there were 10 cases in the preceding week; Glasgow had 49 notifications during the week.

In *Eire* the notifications of measles fell by 108 and of whooping-cough by 22. The fall in the incidence of measles was mainly due to the experience of Waterford, Waterford R.D. No. 1, where the notifications decreased from 108 to 16. An outbreak of 29 cases of measles was reported from Kilkenny, Callan R.D. A further 8 cases of typhoid were notified in Mayo, Claremorris R.D.

In *Northern Ireland* there were decreases in the notifications of scarlet fever 67 and whooping-cough 22. There was a rise of 29 in the incidence of measles.

Week Ending December 10

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 2,855, whooping-cough 893, diphtheria 87, measles 1,596, acute pneumonia 734, cerebrospinal fever 37, acute poliomyelitis 124, acute polio-encephalitis 10, dysentery 133, paratyphoid fever 5, typhoid fever 4, food-poisoning 95.

Medical News

Physician to the King's Household

Dr. R. Bodley Scott has been appointed Physician to the King's Household in succession to Dr. D. T. Davies, who has been appointed Physician to the King.

Nuffield Foundation Medical Fellowships

The Nuffield Foundation is offering a number of fellowships to enable selected persons to receive such higher training as will qualify them for senior appointments in medical teaching and research. All medically qualified persons are eligible to apply for them, but preference will be given to those who wish to specialize in the following: child health, psychiatry, social medicine, industrial health, and chronic rheumatism. The fellowships will be open to persons of either sex—usually between the ages of 25 and 35 years—who hold a university degree in medicine registrable in the United Kingdom, who are normally resident there, who are of high merit, and whose ability and inclinations fit them for an academic career in medicine. Candidates on application should already hold the M.R.C.P. or F.R.C.S. Candidates must be recommended by the executive authority of a university medical school in the United Kingdom. They will be expected to have had at least one year's general clinical experience since registration and as a rule to have held residential hospital appointments in general medicine and surgery. A fellowship will be awarded for one year and is extendable, but, save in exceptional cases, will not be tenable for longer than three years. Normally the annual value of a fellowship will be between £900 and £1,300, subject to income tax. A Fellow may not hold any other award concurrently with his fellowship without the permission of the trustees of the Nuffield Foundation. He will be required to carry out, at institutions approved by the trustees of the Foundation, a programme of work and training similarly approved. Other work, paid or unpaid, may not be undertaken without the permission of the trustees. Applications must be received by May 1, 1950. Forms of application are obtainable from the secretary of the Nuffield Foundation, 12 and 13, Mecklenburgh Square, London, W.C.1.

Bulletin on Narcotics

The United Nations has started publishing a new periodical entitled the *Bulletin on Narcotics*. It is prepared by the Division of Narcotic Drugs. The first number includes articles on the international control of narcotic drugs and opium products throughout the world. The *Bulletin* will publish articles on the scientific and legislative aspects of narcotic drugs and give up-to-date news on their control. The annual subscription for four copies a year is $2, which may be paid in other currencies to the authorized sales agents of U.N. (H.M. Stationery Office in Britain).

Prospective Parliamentary Candidate

Dr. A. D. Robertson has been adopted as prospective Parliamentary candidate by the Motherwell and Wishaw Unionist and Liberal Nationalist Associations.

Film on Food-poisoning

The Ministry of Health has sponsored a new film called "Another Case of Poisoning," which has been produced by the Central Office of Information in collaboration with the Central Council for Health Education. The film takes about 20 minutes to run and shows the many ways in which a patient with food-poisoning may have become infected. Further information about the film can be obtained from the Press Officer at the Ministry of Health.

Sickness Insurance for Women

The directors of the Medical Sickness Annuity and Life Assurance Society, Ltd., state that the present age limit of 35 imposed in connexion with sickness insurance on female lives has now been removed.

Kempner Rice Diet

The Food Rationing (Special Diets) Advisory Committee of the Medical Research Council has recommended to the Minister of Food that supplies of rice and one extra ration of sugar should be made available for the treatment of patients with severe hypertension by means of the Kempner rice diet. The Minister of Food has therefore arranged that patients who on medical advice adopt the Kempner rice diet shall be allowed 4 lb. of rice and one extra ration of sugar a week in place of their allowance of milk and rations of meat, bacon, cheese, and fats. The Advisory Committee considers that there is considerable evidence that a diet consisting entirely of rice, sugar, fruit, and fruit juice as recommended by Kempner (*Amer. J. Med.*, 1948, **4**, 545) will lower the blood pressure in certain cases of hypertension, but that the diet must be rigidly observed if it is to be effective. It points out that the treatment may be not without danger, since progressive renal failure has been observed to occur in patients taking the diet, and the treatment should not be used unless facilities for biochemical control are readily available. Doctors who have not received a copy of Med. 2 (Revised 1948) may obtain one on application to their local food office.

COMING EVENTS

British Association of Physical Medicine

A short course of lectures on the various aspects of physical medicine will be delivered on Tuesdays and Thursdays, from January 3 to February 9, 1950, inclusive, at 5 p.m., and will be suitable for candidates preparing for Part II of the Diploma in Physical Medicine. Further details can be obtained from the honorary secretary, British Association of Physical Medicine, 45, Lincoln's Inn Fields, London, W.C.2.

Neurological Teaching

A limited number of clinical clerkships for students who are preparing for the membership or other special diplomas are available at the school for postgraduate teaching in neurology now in existence at the Maida Vale Hospital for Nervous Diseases, London, W. A course of twelve weekly clinical demonstrations open to all members of the medical profession at a fee of £1 1s. will begin on January 6 at 5 p.m. Full particulars can be obtained from Dr. Redvers Ironside, F.R.C.P., dean of the medical school of the hospital.

N.O.T.B. Association

The annual general meeting of the N.O.T.B. Association will be held at 5 p.m. on February 10, 1950, at B.M.A. House, Tavistock Square, London, W.C.1.

BIRTHS, MARRIAGES, AND DEATHS

BIRTH

Bain.—On December 8, 1949, at the Simpson Memorial Pavilion, to Mabel Gertrude (nee Hall), M.B., B.Ch., B.A.O., wife of Dr. A. J. Bain, Craigbinning House, Dechmont, Broxburn, West Lothian, a son.

DEATHS

Brierley.—On December 8, 1949, at St. Olave's, Ramsey, Isle of Man, Edward Edelsten Brierley, M.B., C.M., F.R.C.S.Ed., aged 77.

Brown.—On November 21, 1949, at Adelaide, Australia, Marie Brown, M.B., B.S., D.P.H., wife of Gilbert Brown, M.B., Ch.B., D.A., aged 66.

Caine.—On December 12, 1949, at 1, New Chester Road, New Ferry, near Birkenhead, Nathaniel Caine, M.D., J.P.

Champion.—On December 13, 1949, at "Beckets," Framfield, Uckfield, Sussex, Selwyn Gurney Champion, M.D.

Dods-Brown.—On December 11, 1949, John Lawson Dods-Brown, M.B., Ch.B., of Newbridge House, Upwell, Wisbech, Cambridgeshire, aged 32.

Elliott.—On November 28, 1949, at Sea Point, Capetown, South Africa, Charles Caldwell Elliot, M.D., aged 83.

Hannigan.—On December 12, 1949, at Gardenfield House, Drumcollogher, Co. Limerick, Maurice Hermann Hannigan, M.D., D.P.H., late of Botesdale, Diss, Norfolk, aged 91.

Hawkes.—On December 8, 1949, suddenly, Alfred Ernest Underwood Hawkes, M.R.C.S., L.R.C.P., of 41, Penkett Road, Liscard, Cheshire, aged 75.

Liversidge.—On December 15, 1949, at a Harrogate nursing-home, William Liversidge, M.D.

Macfarlane.—On December 14, 1949, Ian William Macfarlane, M.B., Ch.B., of 4, Union Place, Montrose.

MacKessack.—On December 9, 1949, at 83, East Avenue, Bournemouth, Peter MacKessack, M.B., Ch.B., D.P.H., Colonel R.A.M.C., Ret.

Rayner.—On December 6, 1949, Percy Chambers Rayner, M.B., Ch.B., of Barwell, Leics, late of Brook House, Earl Shilton, Leics, aged 78.

Russell.—On December 6, 1949, at St. Anthony's, Crowborough, Sussex, Sir Michael William Hansby Russell, K.C.M.G., C.B., M.R.C.S., Major-General A.M.S., Ret., aged 89.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Vaccination Against Smallpox

Q.—*What is considered the best method of vaccination? Is there any truth in the statement that the degree of immunity is directly proportional to the area of foveation? In any case, how can such an immunity be measured? Finally, can you define the term "reaction of immunity"?*

A.—The method of vaccination now officially recommended by the Ministry of Health is the multiple-pressure technique. A drop of vaccine lymph covering an area of about one-eighth of an inch (30 mm.) in diameter is placed on the skin at the prepared site, usually in the region of the deltoid insertion on the left arm. A straight needle, which should be flat-sided or triangular in section (for example, a Hagedorn) and of relatively large size, in good condition, sharp, and sterile, is held parallel or tangential to the arm with the forefinger and middle finger above and the thumb below. One side of the needle point is then pressed firmly and rapidly into the drop about 30 times within 10 seconds, the needle being lifted clear of the skin each time. This rapid up-and-down motion of the needle is in a plane perpendicular to the skin. The needle point is *not* driven into the skin, but at each pressure the elasticity of the skin pulls a little of the epidermis over the point of the needle so that the virus-bearing lymph is carried into the deeper epidermal layers. If the skin has not been unduly irritated by a preliminary cleansing procedure and the needle has been properly aligned, no pain or bleeding should occur and within a few hours there will be no visible signs of trauma.

There is some evidence that the case mortality in smallpox is related to the degree of foveation. Thus, in the Vaccination Report of 1928, case mortality among patients with four scars was 5.4% and increased progressively to 17.9% among those with only one scar. Therefore susceptible persons who are intimate contacts of a case of smallpox should preferably have three or four quarter-inch (60-mm.) insertions rather than the multiple-pressure type of vaccination. There is no infallible test of immunity to smallpox, but failure to vaccinate successfully on two or three successive occasions or the demonstration of complement-fixing antibody is fairly reliable evidence of a high degree of resistance. The so-called "reaction of immunity" is the early local lesion reaching maximum size on the second or third day and characterized by elevation and irritation of the skin but no vesiculation. Such a reaction may be due to sensitivity of the individual to protein or other substances in the lymph and may not be a response to the virus of vaccinia. It should preferably be recorded as "maximum local reaction (non-vesicular) on the second to third day," and if there is any doubt about the potency of the lymph a further attempt at vaccination should be made.

Indications for Digitalis

Q.—*What are the indications for digitalis therapy in patients with normal cardiac rhythm? What is the best method of administration?*

A.—As a broad generalization it may be stated that digitalis is indicated in any case of congestive heart failure. The improvement is not due only to the slowing of the heart, as it often occurs before this is effected. With digitalis therapy in congestive failure the heart volume is diminished and output increased, the rate is slowed, and the force of beat is said to improve. It has also been shown that the right auricular pressure is diminished. In failure secondary to anaemia, emphysema, and thyrotoxicosis, digitalis has hardly any effect, and the primary cause must be treated. The raised right auricular pressure in these cases tends to maintain the cardiac output. Digitalis is also given in cases of rheumatic carditis when it is necessary to control the tachycardia. On recovery from heart failure, digitalis may be continued in those patients whose effort tolerance is so impaired as to interfere with their livelihood; it should not be given in any case of peripheral circulatory failure.

The best method of administration will depend on how urgently the drug is needed and on whether the patient has already been taking it. Rapid digitalization may be obtained by intravenous administration of 1 mg. of "digoxin," given slowly and diluted in 10 ml. of saline. At the same time 2 gr. (0.13 g.) of the powdered leaf may be given every six hours for two to three days, depending on the rapidity of control. The maintenance dose varies considerably, and can be determined only by experience with a particular patient. If the patient has already been taking digitalis, much more cautious dosage is necessary.

Thiopentone in Eye Surgery

Q.—*Is thiopentone soluble or any similar anaesthetic being used effectively and safely in eye surgery, especially for extraction of the lens in cataract operations? If so, are there any contraindications to its use in patients over 70 years of age?*

A.—Thiopentone soluble is being used widely as a safe and effective anaesthetic for cataract operations in cases where a general anaesthetic is desired. Intermittent injections of a 2½% solution or a continuous drip of 0.5% solution are equally satisfactory. Attention to the following points makes for safety. A pharyngeal airway liberally greased with a local analgesic lubricant should be used in every case, and a stream of oxygen allowed to flow into the pharynx throughout the operation. A drop or two of cocaine placed in the eye obviates many reflexes due to operative stimuli, and may avoid the need for large doses of thiopentone. Great care must be taken to keep the airway perfectly clear throughout the operation, and, if the anaesthetist is in doubt about his ability to do this with only a pharyngeal airway in place, he should not hesitate to use an endotracheal tube. In such a case the larynx should be well cocainized to avoid coughing during the operation should the anaesthesia become too light.

There are no contraindications to the use of thiopentone in patients over 70 years of age, so long as it is remembered that the elderly require but small doses of the drug to produce the desired effect. In such patients in particular, heavy premedication should be avoided before using thiopentone as the sole anaesthetic.

Histamine Therapy for Urticaria

Q.—*Could the method of histamine desensitization referred to in "Any Questions?" of May 10, 1947 (p. 666), be used for a boy of 16 who suffers from recurrent attacks of urticaria which respond to treatment with antihistamines, but who is not totally free from urticarial rash? In a bad attack, a saline purgative, together with antihistamines, seems to help in clearing up the rash for a few days. If the method can be used, is it necessary to test for histamine-sensitivity before starting treatment? Urticarial weals of all sizes have been observed, but no "pseudopodia."*

A.—Histamine therapy for urticaria is usually disappointing and has been given up by many workers in this field. A few cases of chronic urticaria appear, however, to do well on this therapy. Preliminary skin-testing with histamine is unnecessary. The following dosage for chronic urticaria is advised by H. L. Alexander (*Synopsis of Allergy*, 2nd ed., Kimpton, London, 1947, pp. 164–5). On the first day two injections of 0.05 ml. of 1 in 10,000 histamine (histamine diphosphate), and on the second day two injections of 0.01 ml., are made. Ten daily injections are then given, starting with 0.15 ml. and increasing each dose by 0.05 ml. up to 0.50 ml. of a concentration of 1 in 10,000. A solution of 1 in 1,000 histamine is then used, and the next two doses are 0.05 ml. and 0.10 ml. of this strength. Five injections are then given every two days, starting with 0.15 ml. of 1 in 1,000 histamine and increasing each dose by 0.05 ml. up to a maximum of 0.30 ml., which is repeated

once. Five injections of 0.30 ml. are then given every three days. According to Alexander (loc. cit.), "One course of treatment may suffice, or further ones may be necessary. If no results occur after 15 or 20 injections, they are not likely to appear." The possibility of food allergy in this case should be considered—and symptoms may occur only when excessive amounts of the offending food are taken. Keeping a food diary and trial dieting might help.

Peptic Ulcer due to Trauma

Q.—*Is there any substantial evidence that a severe blow on the epigastrium might cause a duodenal ulcer? I would be grateful for references and any information.*

A.—A number of cases of probable traumatic gastric or duodenal ulcer have been reported, and the subject has recently been reviewed by Crohn (*Gastroenterology*, 1947, **8**, 735). There seems to be good evidence that local trauma to the upper abdomen can result in a peptic ulcer which manifests itself within a few days. Although the psychosomatic aspect is difficult to exclude, it is probable that submucosal and intramucosal haemorrhages may be followed by ulceration, and this has been observed gastroscopically.

Acquired Allergy

Q.—*A married woman of 35, with no personal or family history of allergy, had a liaison with a man who had such a history, and as a result she became pregnant. Her child developed infantile eczema during his first year. Twelve months later the liaison was resumed for one week, when a contraceptive paste was used. The following week she had severe generalized urticaria with slight asthma. Adrenaline gave prompt but transient relief, and the condition cleared slowly with antihistamines. Is it a tenable theory that she was sensitized by her child during pregnancy to a factor provided during intercourse by the child's father?*

A.—No, she could not be sensitized by her child or by the father. In children with very early allergic manifestations it is usual to obtain a history of allergy in both parents; it is therefore suggested that if the patient made a more careful inquiry she would find that she had a family history of allergy. In all probability her present symptoms are due to psychological disturbances. It may be, also, that they had nothing to do with her liaison and that the association was accidental. Possible allergens which might be suspected are quinine or some other drug used in the contraceptive paste, or foods such as chocolate or fruit which she may have eaten in excess at that time.

Unsuccessful Injection of Varicose Veins

Q.—*For the first time in 13 years' experience of injecting varicose veins I have met a patient who resists every attempt at inducing thrombosis. There is no fault in technique, and she tells me that doctors in the Services had the same experience. Why is this? What happens to the sclerosing solution? Can you suggest a remedy?*

A.—There are now and again cases of this type. The twin injection of quinine and salicylate sometimes succeeds and so does 30% saline. Ligation of the veins with simultaneous injection in the orthodox way, however, always achieves thorough thrombosis.

Survival of the Flea

Q.—*Is it known how long the common flea (Pulex irritans) can survive in an empty house? What is the best means of cleansing an infested house?*

A.—Many varieties of flea are adapted to survive for long periods in the absence of their host. The larval flea develops to the adult stage and then waits, resting in its cocoon, until the disturbance caused by a returning host indicates the presence of a further source of blood meals. The human flea is no exception to this general rule and can certainly survive several months, in the cocoon, in an empty house. Bacot (1914) records an average of 116 days' survival at 53° F. (11.65° C.); the maximum period he observed was 239 days. To eradicate a heavy infestation it may be desirable to employ fumigation experts to disinfest with hydrogen cyanide. It should, however, be possible to destroy the fleas by scattering flake naphthalene over the floors (about 4 lb. (1.8 kg.) per room) and leaving the rooms sealed up for a day or so. For fuller details see the *Monthly Bulletin of the Ministry of Health and Public Health Laboratory Service*, October, 1944.

NOTES AND COMMENTS

Acute Nephritis and Sweating.—Miss H. COOPER (sister tutor in the preliminary training school, General Hospital, Birmingham) writes: In Dr. Charles Romer's letter (November 12, p. 1128) he questions whether patients suffering from acute nephritis "tend to sweat excessively." As sister tutors we teach that a blanket bed is used for nursing these patients, not because they do sweat but in order to induce sweating and increase the amount of fluid loss. This seems reasonable, since the important balance between the activity of the skin and the kidneys is upset in acute nephritis. Patients suffering from acute rheumatism, on the other hand, do in fact tend to sweat, and the use of blankets in these cases is to provide a material next to the skin which will readily absorb perspiration. We have always tried to teach the physiological reasons underlying the use of these beds and have emphasized our different aim in each case. Nevertheless we feel that the value of the amount of diaphoresis induced by the use of blankets next to a patient suffering from acute nephritis is outweighed by the discomfort which this causes to some patients. We would suggest that in future it would be better to teach the use of one soft blanket next to the patient wherever it adds to the comfort of that patient—e.g., aged or very thin people—rather than to emphasize the questionable diaphoretic value of blankets next to the skin in the case of acute nephritis.

Proguanil as a Malaria Suppressant.—Dr. CH. W. F. WINCKEL (Amsterdam) writes: Under the heading "Any Questions?" (November 26, p. 1245) your expert on malaria ended his answer to a question on proguanil as a malaria suppressant as follows: "The frequency of relapses of vivax malaria may be reduced by taking one of the 8-aminoquinoline drugs—for example, pamaquin, 0.01 g. thrice daily for 10 to 14 days; with each dose of the drug it may be more effective to combine quinine 0.6 g. or mepacrine 0.1 g." This alternative might lead to confusion, and therefore I should like to make the following remarks: (1) It is very unusual to treat attacks of vivax malaria (*a fortiori* of falciparum malaria) with pamaquin only, as this drug is rather poor as a schizonticide, whatever its merits as a gametocide, and especially as an anti-relapse drug. (2) For this reason the combined use of pamaquin and a schizonticidal drug is recommended in every textbook on tropical diseases. (3) Usually only quinine is recommended for this purpose, mepacrine being seldom recommended, for the simple reason that the combination of pamaquin and mepacrine is too toxic. It would not be difficult to quote many authors who express this opinion. It may suffice to mention Manson's *Tropical Diseases*, 1946, London, p. 103, which states: "The simultaneous exhibition of 'atebrin' and 'plasmoquine' is not to be recommended, as it may cause alarming symptoms."

Breathing Through a Closed-circuit Apparatus.—Dr. W. N. ROLLASON (Scunthorpe, Lincs) writes: Your answer in "Any Questions?" (October 29, p. 1000) on breathing through a closed-circuit apparatus reminds me of a leisure hour I spent nearly four years ago breathing through a Coxeter-Mushin closed-circuit machine with a basal oxygen flow of 500 ml. As reported in the *Journal* of January 19, 1946 (p. 106), my pulse varied between 72 and 68 and my respirations between 16 and 14. I experienced slight discomfort towards the end due to the pressure of the face-mask, but otherwise no untoward effects during or after the inhalation.

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